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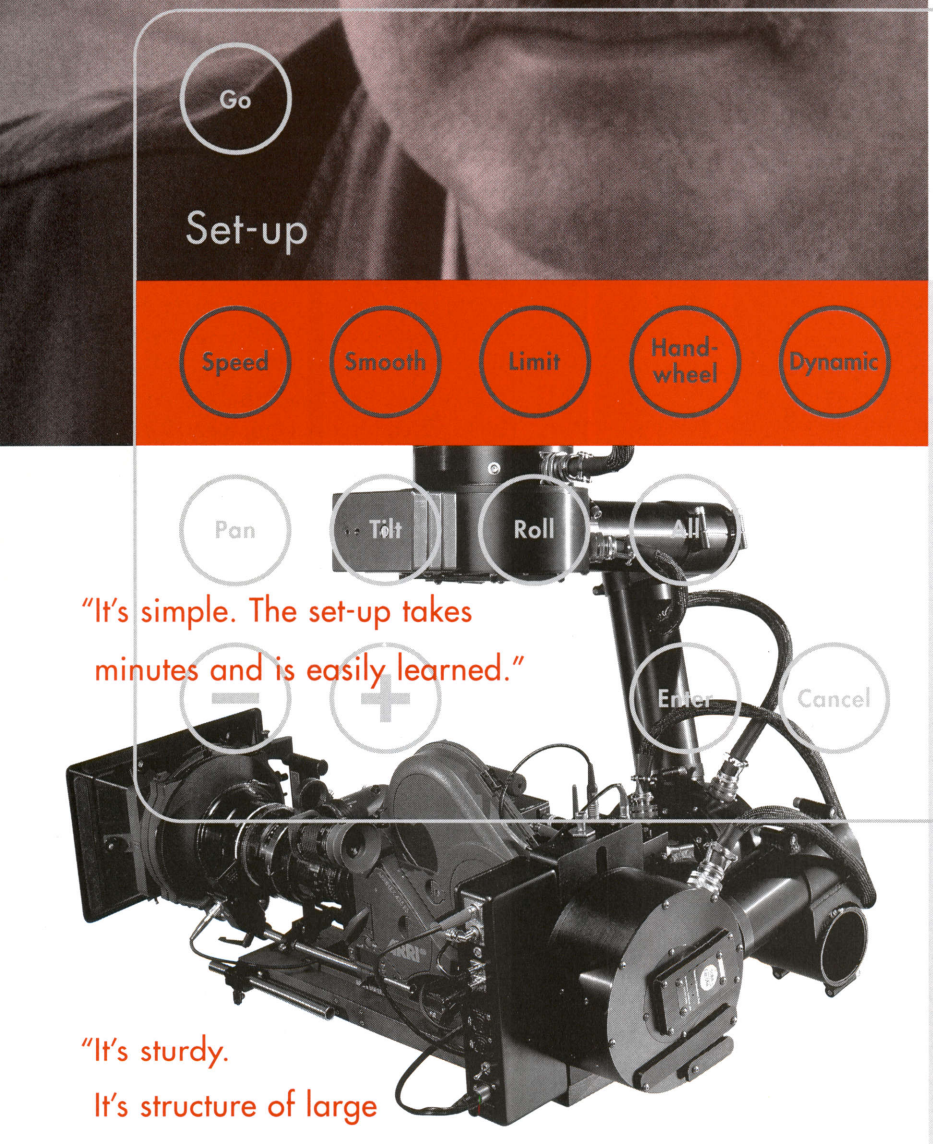

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On Our Cover:
A futuristic freedom-fighter (Keanu Reeves) readies himself for double-barreled action in *The Matrix*, a head-tripping techno-thriller directed by Andy and Larry Wachowski and photographed by Bill Pope (photo by Jasin Boland, courtesy of Warner Bros.).

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Patricia Thomson
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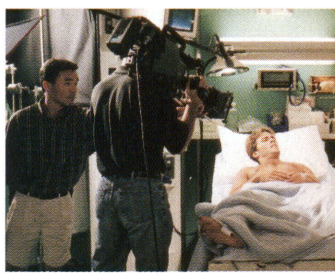

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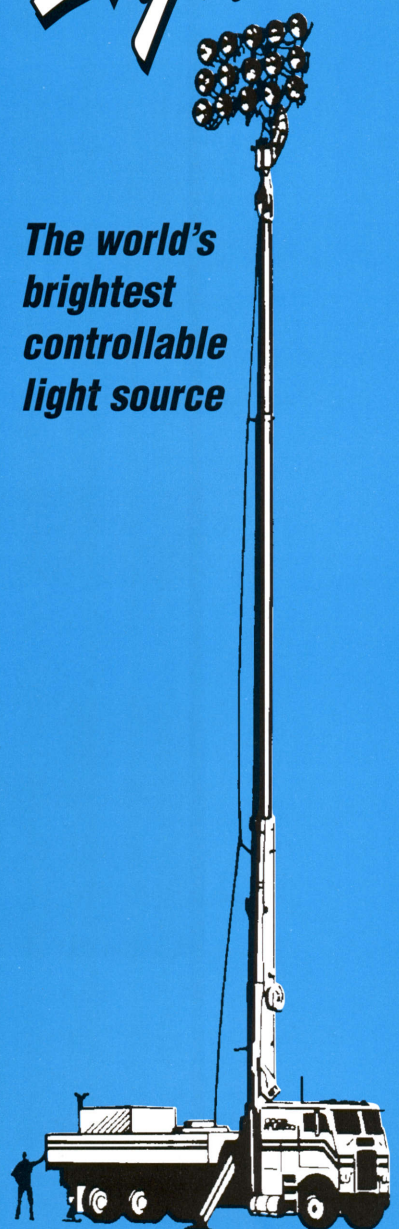
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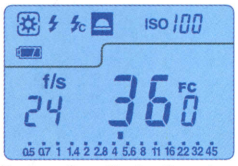

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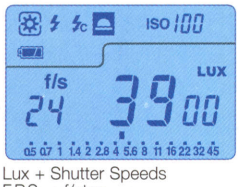

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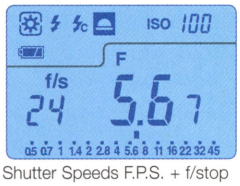

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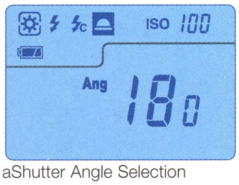

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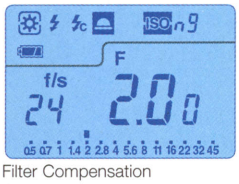

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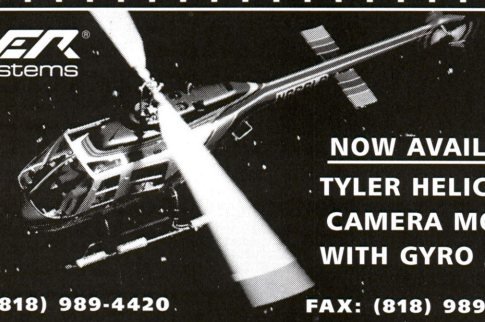

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ON FILM

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Carolyn Chen was an assistant cameraperson for nearly eight years until she bought a camera and began shooting music videos. Her credits include this year's Academy Award® nominated short film *Culture* as well as many commercials and videos. *Entropy* is her first narrative feature credit.

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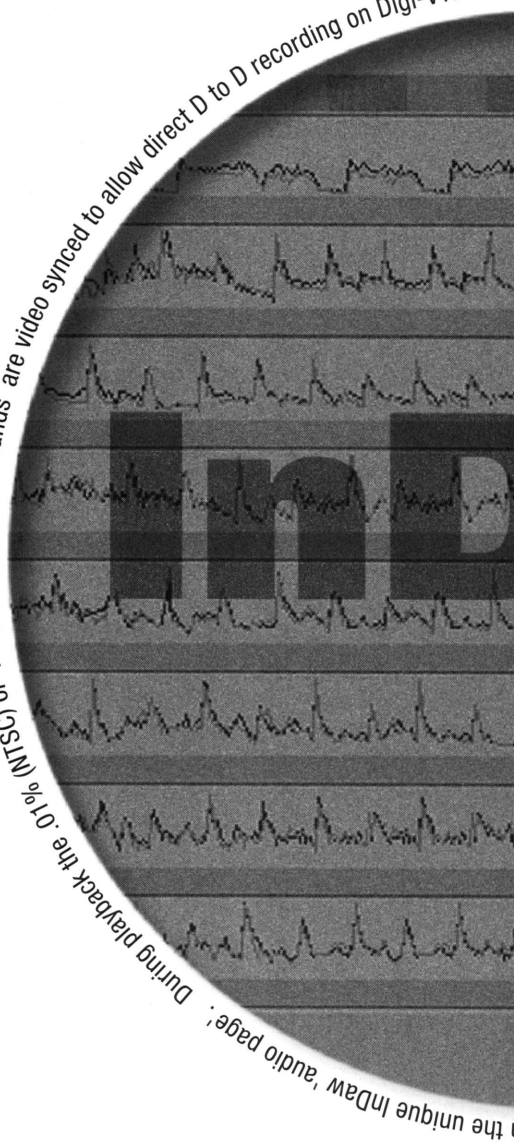

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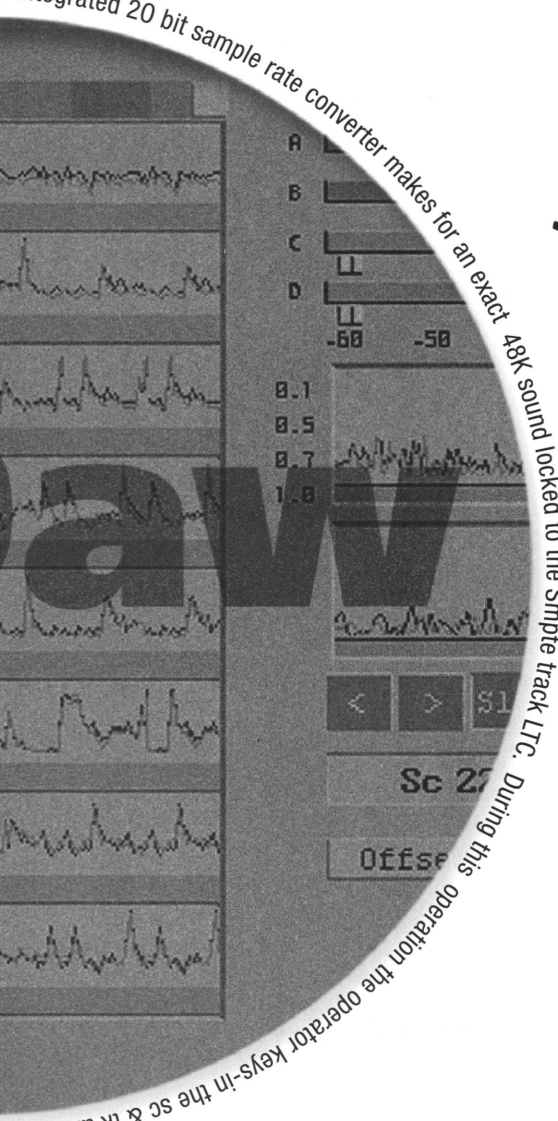

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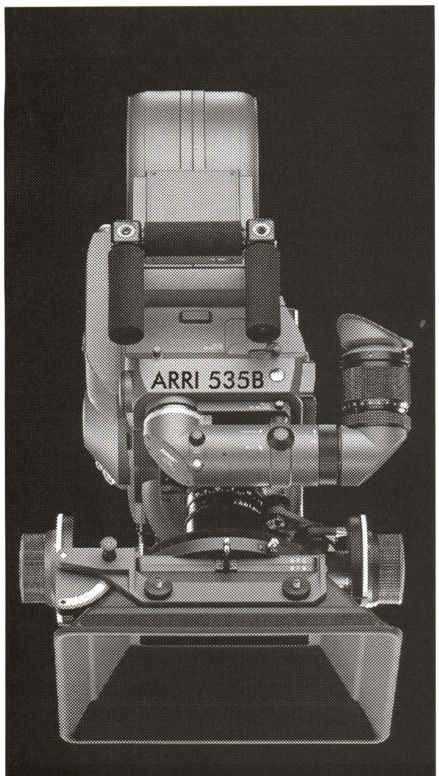

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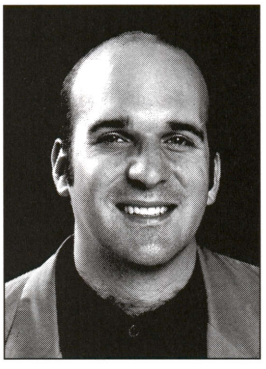

In this increasingly digital era, proponents of computer technology are everywhere, waxing eloquent about megabyte-intensive mainframes, screamingly fast silicon chips and other innovations that most casual Web surfers will never, ever understand. While these developments have certainly brought all kinds of conveniences to your desktop and mine, the rapid rush toward Y2K is fraught with potential perils that range from the mundane (VCR clocks that can't keep good time, overcooked microwave dinners) to the truly Biblical (entire nuclear arsenals sent airborne at once).

The downside of the digital age forms the core of *The Matrix,* a futuristic techno-thriller in which humans serve as D-cell batteries in a dystopian society run by our old friends, the computers. Directed by Andy and Larry Wachowski and photographed by Bill Pope, *The Matrix* is a sci-fi extravaganza that combines state-of-the-art cinematography, kung fu, and a complex script that had Hollywood development executives scratching their heads for years. How could we possibly resist total coverage? Naturally, we couldn't, so we asked Christopher Probst and Ron Magid to bring back the story. Their articles (written on computers, of course) appear on pages 32 and 46, respectively.

Digital technology has also wended its way into the world of television, as Michael Hersh's article on a recent episode of *Chicago Hope* details ("A High-Concept Drama in High-Def," page 56). Given cinematographer James Bagdonas, ASC's positive feedback about Sony's HDC-750 camera, this experiment could have some very interesting repercussions, as directors of photography face new technical challenges while shooting with cutting-edge technology for high-definition broadcasts.

The phrase "cutting edge" has an entirely different meaning in the new horror/comedy feature *Idle Hands* (page 64), in which various characters' extremities are severed from their bodies. Photographed by rising young cinematographer Chris Baffa, this macabre, Poe-like tale is leavened with a generous dollop of puckish humor, making it a fine option for teenage Lotharios who'd like their dates to grab their arms, but not run screaming from the theater.

All movie lovers have fond memories of those early trips to the cinema, and this month we've collected the reminscences of eight ASC members who vividly recall the films that shaped their ambitions ("Indelible Impressions," page 75). Their eclectic choices indicate an enduring affection for the art form.

It certainly helps to be movie-crazy during a pilgrimage to the Sundance Film Festival, where the ambitious viewer can choose from hundreds of screenings over the course of just 10 delirious days. This year, *AC*'s quartet of correspondents satiated themselves in snowy Park City, taking in close to 50 films. Seven of the most intriguing are featured in our annual coverage of the event, which begins on page 96, while others will be covered in subsequent issues. (Regular readers will note that *AC* was prescient enough to cover *Three Seasons,* which took home three major Sundance awards, in our February '99 issue).

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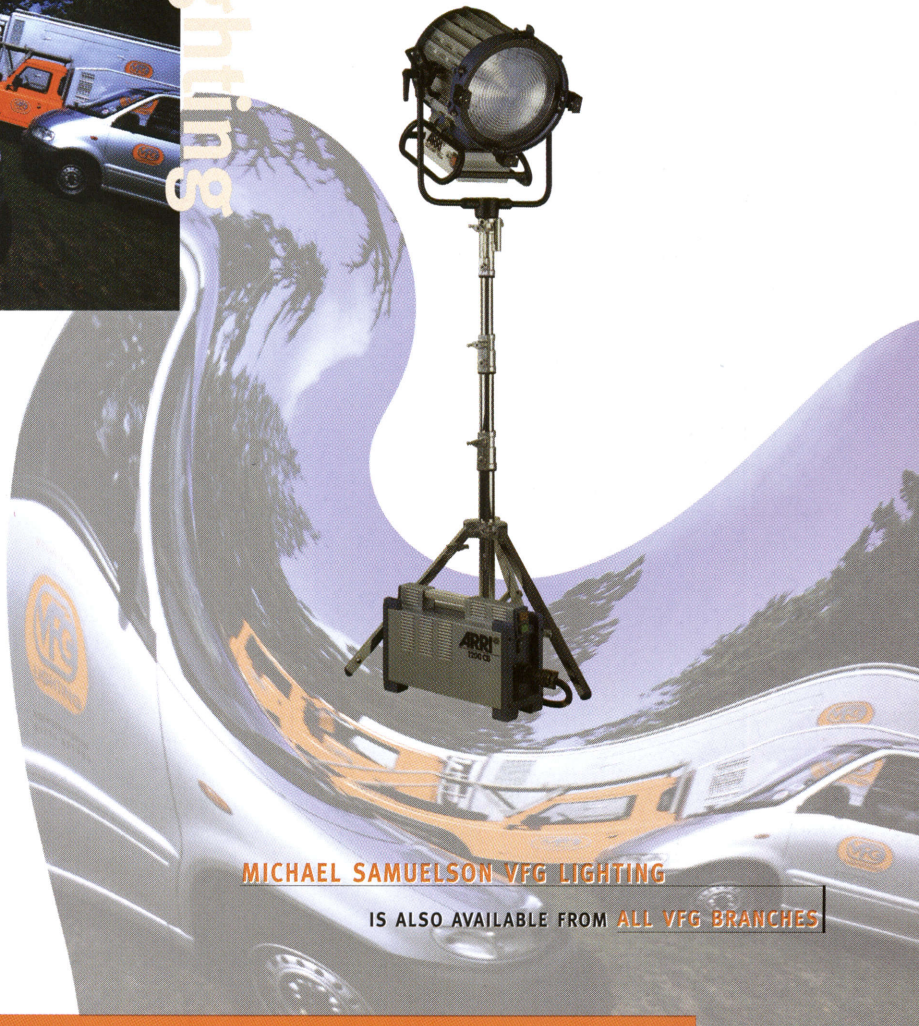

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Global Village

Up, Up in the Air

by John Gainsborough

In a June 1996 *AC* article detailing cinematographer Stephen Burum, ASC's work on the film *Mission: Impossible*, Paris-based correspondent Benjamin Bergery reported on the use of balloon lights employed for a complex setup during a 12-day shoot on the Vlatava River in Prague. These floating fixtures were modified versions of a balloon light manufactured by the French firm Airstar.

As Bergery noted, the balloon light is a disarmingly simple concept. A lamp, with a reflector above it, is suspended inside a translucent, helium-filled spherical balloon. The balloon is floated to a predetermined height, and the supply cable is carefully drawn out of frame. As the lamp is struck, it emanates a soft, almost shadowless aura. By deploying several such lights, this ambiance can be spread evenly over a wide area.

Several of Leelium Ltd.'s Tube Lite fixtures illuminate the interior of a soundstage.

Since being utilized on *Mission: Impossible*, balloon fixtures have also been under development by the London-based Leelium Ltd. Launched in 1996 by Rawdon Hayne and John Lee — a founding director of the multinational rental company Lee Electric (Lighting) Ltd. — Leelium has since evolved the original balloon-lighting concept into a sophisticated system known as the Tube Lite. This modular system is now available for lease.

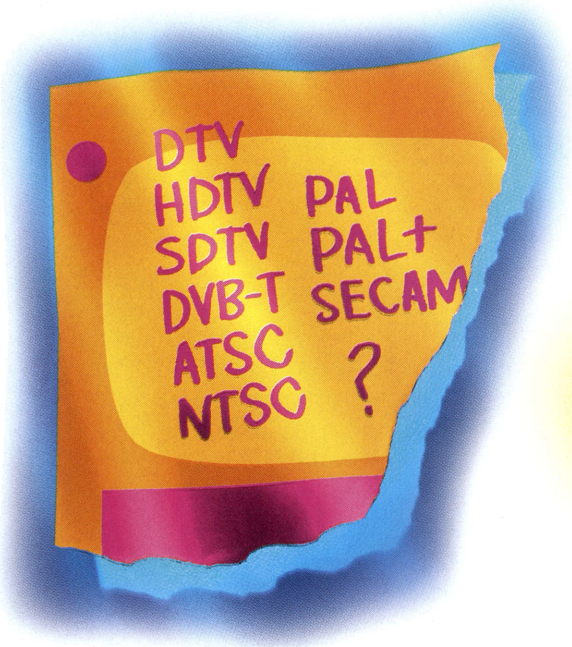
John Lee's extensive experience in film and television lighting has been important to Leelium's evolution. In 1954, John and his brother Benny began their careers as electricians at MGM's London studios. Seven years later, they formed Lee Electric (Lighting) Ltd. with some £800 ($1,300) in capital, which was used to purchase a handful of fixtures from Mole-Richardson for rental as film and exhibition lighting. Later, they established Lee Filters, in conjunction with David Holmes, to devise filters and lighting accessory materials The brothers were also involved in the development of compact-source-iodine (CSI) and compact-indium-discharge (CID) lamps. In 1967, the Lees bought a disused biscuit factory in North London to house their operations, as well as three soundstages. This new studio attracted some major productions, including *Ryan's Daughter* (1970, shot in 65mm by the legendary Freddie Young, BSC) and *Clash of the Titans* (1981, featuring photography by Ted Moore, BSC and visual effects by Ray Harryhausen). The company steadily built up its base, first by acquiring Colortran in Burbank, California (to provide an American lighting manufacturing operation), and then EMI's complete lighting stock (with which they set up the TV-oriented subsidiary Elstree Lighting). In 1971, Lee Lighting scored a nearly 20-year contract with the BBC to provide over 70 percent of all the network's exterior broadcast lighting.

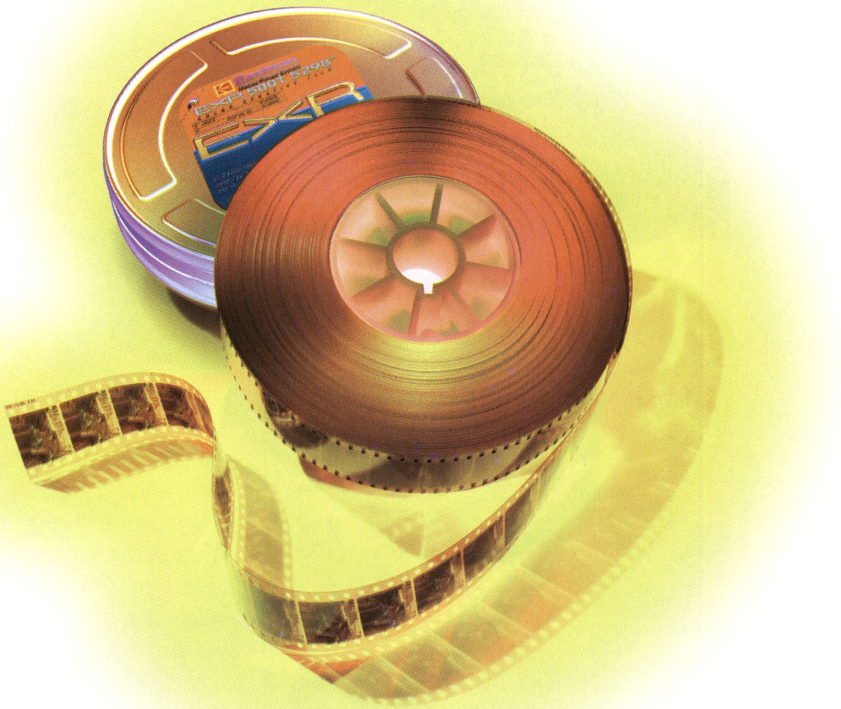
The enterprising Lee brothers soon established footholds in the cities of Paris, Madrid and Vienna, as well as within Eastern Europe. In 1986, Lee Lighting went public and capitalized at £80m ($130m); John Lee departed the company two years later.

Lee Lighting always ran an extensive R&D program: the company's lighting innovations included advancements in flicker-free, solid-state electronic ballasts (for which they earned a 1987 Technical Academy Award), improved lamps, ultra-quiet generators (with noise levels of less than 45db at seven meters) and many new forms of luminaires.

With this history in mind, it stands to reason that John Lee would recognize the widespread potential of the innovative spherical balloon lights employed on *Mission: Impossible*. He also knew that the production's first assistant cameraman, Rawdon Hayne, shared a similar view. Hayne himself had been toying with a kindred concept, but one which utilized a tubular balloon measuring approximately 12' x 5'. Given their like-minded outlooks, it made perfect sense for Lee and Hayne to join forces. True to British tradition, the two sealed a deal over a pint of lager in a pub, and set up Leelium Ltd. immediately afterwards. Together with Lee's longtime colleague Bob Jeffs, they soon formed the triumvirate behind the Leelium Tube Lite system.

As Hayne explains, the design objective was to achieve the maximum possible light output within a minimum given envelope (balloon) size, rather than increase the envelope area to accommo-





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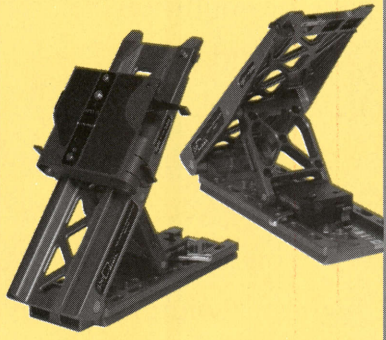

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date more lamps. To attain this goal effectively, all of the components inside the balloon (lamps, connectors and reflectors) or attached to it (the essential umbilical of MSR 2-core or incandescent 4-core cable and helium feed lines) had to be as lightweight as possible. The device also required a highly efficient remote ballast and distance-strike device.

The Tube Lite's translucent envelope consists of three layers of non-conductive material, one of which incorporates a UV inhibitor. The balloon's upper internal reflector directs light downwards at an angle of 140 degrees. (A spherical balloon version provides some light upwards as well as downwards, providing operational flexibility.) The lamp bases contain a material lighter than traditional ceramic, and the cable, connectors and helium feed are all specially prepared for the minimum amount of dead weight. Redesigning the bulb base and connectors alone resulted in a decrease of 1.5 cubic meters in the balloon's helium burden.

In order to achieve an optimum illumination/lift ratio, a very fine balance had to be struck between total balloon size, weight and light output. The system's final key elements include a compact remote solid-state ballast and strike unit, and a universal helium valve system (which Leelium claims will fit any type of gas-supply cylinder worldwide).

Leelium currently has three daylight Tube Lite balloons available: a 2.4K or 5K medium-source-rare-earth (MSR) lamp housed in a 12'6" x 5' envelope (the latter unit is capable of floating to a height of 25'), and a 10K MSR in a 20'6" x 6' balloon with a lift capacity of 60'. (A complementary range of balloon lights using incandescent lamps is also available.) In conjunction with a major American lamp manufacturer, the company is finalizing the development of a 3200°K MSR bulb which will offer exceptional efficiency and run from a normal 13-amp (U.K.) socket.

Tube Lites can be set up by a single rigger, and because the units are drip-fed with helium through an umbilical cord, the balloons can be kept aloft for weeks on end, if necessary. The Tube Lite can also be fitted with adjustable Mylar "skirts" to provide a form of flag, and tethered to offer lighting above, say, a complete street.

The Tube Lite's surface temperature is normally only 6°C above ambient levels. Since helium is both an inert gas and a cooling agent, changes in molecular structure effectively dissipate the bulb's heat through gaseous discharge. The lamp's heat also expands the helium, which facilitates operational economy, as the balloon only needs 75 percent of gas by volume to provide 100 percent fill for the envelope. Cinematographers making use of these balloon lights in historic European buildings have found the low operating temperature to be advantageous. Delicate ceilings, and particularly ceiling paintings (such as the 18th-century frescos found at the Naval College in Greenwich, London, which was recently featured as a location in *The Avengers*), are unaffected by such lights floating close by. Also, since balloon fixtures don't require any structural support, use of the Tube Lite system can afford a production major savings on rigging time and transportation. (John Lee appreciates this advantage from personal experience, having spent his early years at MGM moving and striking carbon-arc Brutes.)

Full photometric data on the Tube Lite system (in all permutations) will soon be available on Leelium's website (www.leeliumballons.com), as will news about further system additions.

A vital element of Leelium's R&D process is user feedback. The Leelium Tube Lites have therefore been put into practice during their development on productions as diverse as *Peak Practice* and *Kavanagh QC* (two popular British television series), the smash feature *Shakespeare in Love* (shot by Richard Greatrex, BSC), and various commercials.

In addition to being available from Leelium's base in London, the Tube Lite balloon system will shortly be offered for rental through Fisher Productions, Inc. in the U.S., and William F. White in Canada. ■

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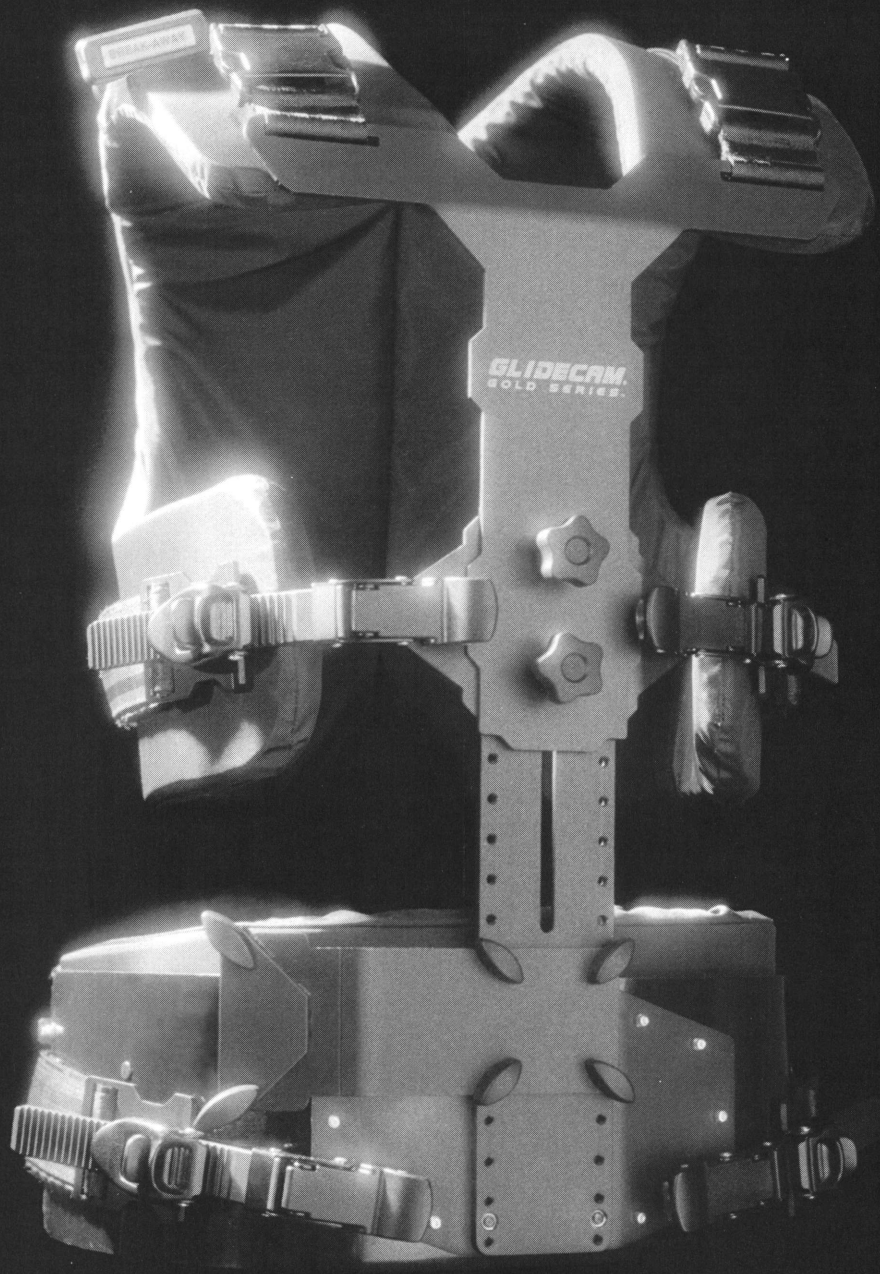

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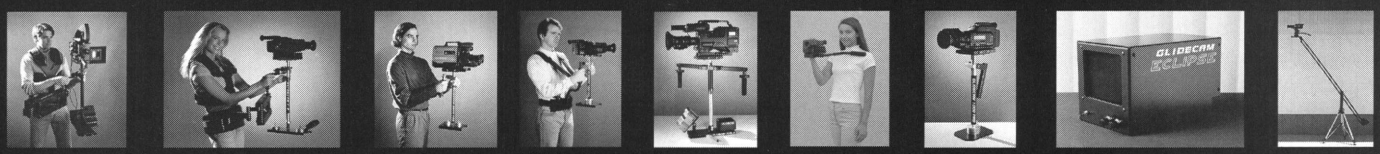

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Production Slate

compiled by Andrew O. Thompson

0Opera diva Kate Ashton (Amanda Boyd) and her co-singer, Sam (Richard Coxon), contemplate their love for one another in an 18th-century-set dream sequence in *Lucia,* an experimental movie shot in digital video by Dewald Aukema, SASC.

Photos courtesy of Portman Entertainment.

A DigiBeta Aria

by Mark Dillon

An experiment in avant-garde digital videomaking, *Lucia* was brought to the big screen by British writer/director Don Boyd and South African cinematographer Dewald Aukema, SASC. The picture was inspired by Italian Gaetano Donizetti's 1835 opera *Lucia di Lammermoor,* which was in turn based on Sir Walter Scott's 1819 novel *The Bride of Lammermoor,* the tragic tale of an 18th-century Scottish woman driven insane by a conflict between her brother and her lover. Boyd has incorporated elements of both works into *Lucia,* framing his narrative with the story of a contemporary group of singers preparing to perform the opera in a Scottish castle bequeathed to two of its members — the brutish Hamish (Mark Holland) and his sister Kate (Amanda Boyd, the director's daughter). The opera mirrors the uneasy drama unfolding among its performers, as Hamish pressures Kate into marrying Oliver (John Osborn) — whose wealthy American family can save their crumbling manor — despite the fact that she is truly in love with Sam (Richard Coxon).

Boyd is no stranger to opera-driven films, having worked as a producer on *Aria* (1988), an anthology project for which 10 directors (including Nicholas Roeg, Jean-Luc Godard, Robert Altman, Julien Temple and Ken Russell) each contributed a short segment set to operatic scores. Equally ambitious, *Lucia* weaves the opera into several levels of reality — the present; 18th-century dream scenes; and fantasy segments. The filmmakers strove to choose a format that could effectively convey each of these levels, while still adhering to a £580,000 (approximately $1 million U.S.) budget. Because their desired end product was a 35mm film print, the duo initially considered interweaving Super 8, Super 16, and 35mm footage.

Both Boyd and Aukema are veterans of the austere documentary world, and have experience with most technologies available on the market. After Aukema graduated from the Pretoria Film School in 1982, he formed a film production company with a classmate, and assumed the director of photography role. Three years later, Aukema shot his first drama for television, followed by his first feature, yet much of his career's initial nine-year span was dedicated to content-driven anti-apartheid documentaries and dramas for English TV networks, notably the BBC and Channel 4. He also shared cinematographic chores with Peter Tischauer on the documentary *Mandela: Son of Africa, Father of a Nation* (see Production Slate, *AC* July '97), which was directed by his former classmate, Angus Gibson. It was only after the early Nineties — when South Africa's political situation stabilized — that Aukema began explore cinematography's fictional applications. In 1992, he met Boyd while the director was shooting a documentary

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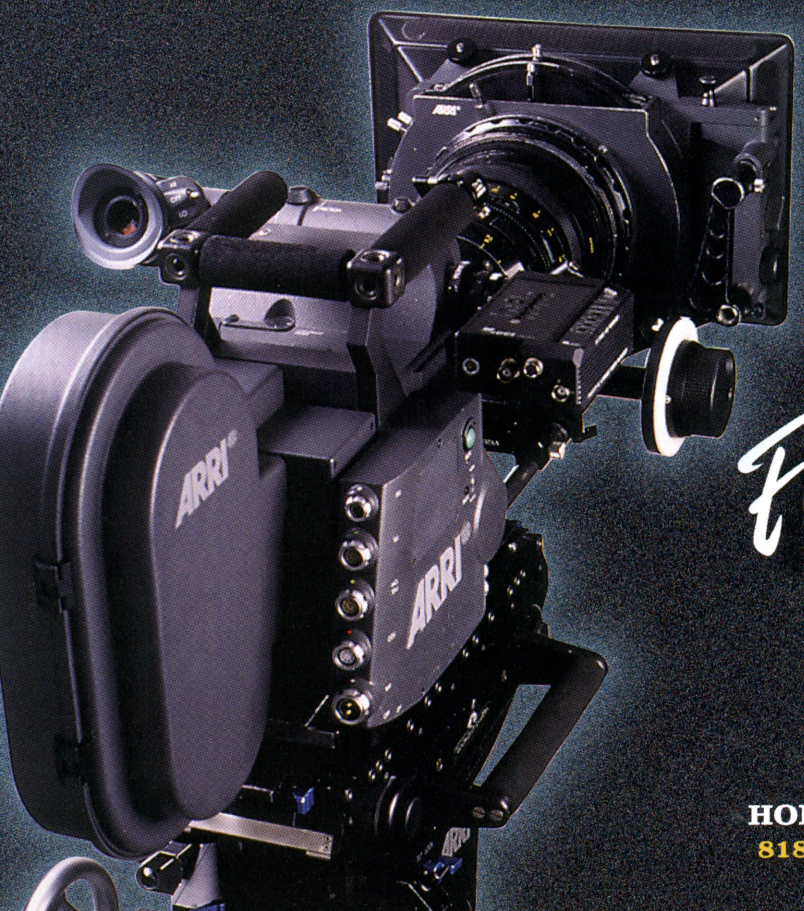

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Lovestruck and despondent, Kate takes to a wretched act of murder.

in South Africa, and the pair have been close collaborators ever since.

Boyd and Aukema subsequently teamed on a documentary about British architect Sir Norman Foster, shooting with a Sony DVW-700WSP Digital Beta camera. While prepping for *Lucia,* they wondered if digital video could be successfully utilized for a dramatic narrative. Toward that end, the pair put the camera through a series of skin-tone and contrast tests at the picture's principal location — Gosford House, which is located near Edinburgh, Scotland. London-based Colour Film Services output the footage to 35mm negative at 575-line resolution, resulting in a softer look than that they could have achieved with their cleaner, harder 2,000-line process. Viewing the projected footage on a large screen convinced Boyd and Aukema that they were on the right track.

The next step was persuading *Lucia* producers Stephanie Mills and Alison Kerr that the digital format was viable. "They were a bit skeptical, but when they saw the material, their skepticism disappeared," Boyd admits. "They knew it would be unusual, as was the entire project." (In fact, *Lucia* is the first U.K. feature to use the DigiBeta-to-35mm process.)

During preproduction, both Boyd and Aukema paid particular attention to the success of *William Shakespeare's Romeo + Juliet*, the 1996 film directed by Baz Luhrmann and shot by Donald McAlpine, ASC, ACS. That film proved to them that an audience existed for a postmodern interpretation of a classic tale. "*Romeo + Juliet* proved to many producers that aesthetic [experiments] and non-classical constructions weren't a total risk," Aukema says. He also credits the medium of music videos for "broadening many people's visual literacy, and expanding [the number of methods] they're prepared to accept as storytelling technique."

Shooting *Lucia* on DigiBeta allowed the luxury of uncommonly long takes, which became a crucial advantage while shooting the opera sequences, which were covered with up to four cameras. As one might expect, performers can intone complex measures of *Lucia di Lammermoor* only two or three times before the onset of vocal-chord exhaustion. According to Boyd, "It's difficult to get opera singers to reproduce [their singing pitches] so you can match-cut in the way you would need to with single-camera shooting. We even considered the limitations of a 1,000' mag [during planning]."

Given the patchwork of production formats that the filmmakers had originally considered using to tell their complex tale, another major advantage of the Sony DVW-700WSP was that the filmmakers could easily vary visual styles in-camera during production, as opposed to relying upon costly post processes. The gamma; black levels; primary and secondary colors in highlights, midtones and shadow areas; and overall saturation could all be manipulated rapidly through the camera's engineering menu, and then stockpiled in memory chips that could be removed and replaced. "Because of our short [17-day] schedule, we often arrived at the look we wanted on set during the shooting day," Aukema recalls. "To go back to that sequence three or four days later, you just pop the chip in, read it, and off you go."

Typically, the cameraman recorded *Lucia*'s contemporary castle scenes with little more than daylight cast through windows, and made no attempt to soften the image through filtration. High-angle shots emphasize the rooms' scope, and a romantic mood is conveyed in large part through the opera singers' period costumes, as well as the antique mirrors and paintings crowding the backgrounds. Even using just natural light, Aukema could shoot wide open (T2) and still have sufficient depth of field. "With digital video, you can control the way the camera responds to the light coming through the lens in a way you can't with a film camera," he notes. "In many instances, we would have had to light [with artificial sources]. But you can very rapidly alter the gamma [curve] of the digital camera, effectively the exact degree of contrast you want."

Because of the camera's adjustable sensitivity, Aukema rarely had call upon gaffer Paul Hill and his crew for supplemental lighting. The director of photography showed one crew member a setup that had taken all of two minutes to prepare; although it appeared flat to the eye, Aukema indicated on a monitor how the camera had manipulated the image. He was met with the response, "Well, yes, that's interesting — does this mean the end of my job?"

The operatic performance sequences set in the castle's various chambers did feature some artificial ambiance, however. Aukema and Boyd instructed theatrical lighting designer Simon Mills to illuminate the shots as he would on a traditional stage production. In order to sustain the sharpness needed for the future 35mm transfer, Aukema resisted using diffusion, concluding that the theatrical lighting "was not punchy enough for tape, so I had to manipulate the camera to introduce more contrast into the scene."

While the digital camera does make the most of existing lighting, the "predictably unpredictable" U.K. weather did require some traditional lighting as a backup measure during the creation of some exterior scenes. Early in the film, Sam, who is rooming in a Gosford House tower, reads from *The Bride of Lammermoor* just prior to a night's sleep. He later dreams that he has

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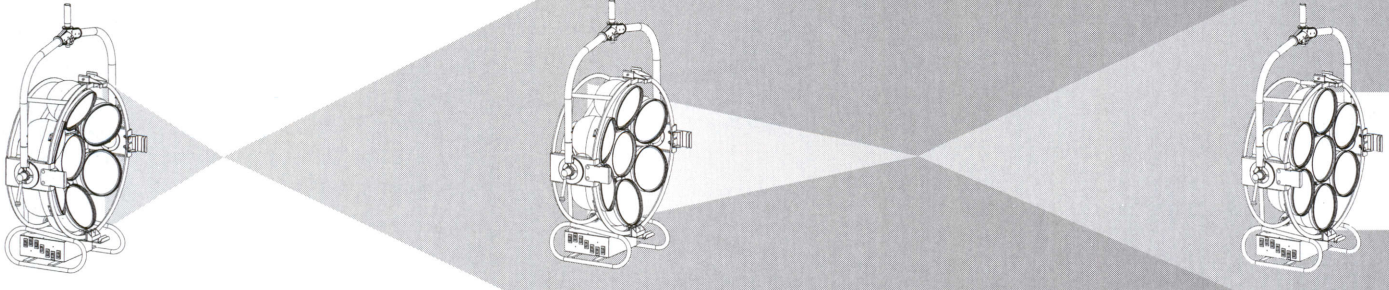

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become a character from the book named Ravenswood, and is partaking in an 18th-century funeral procession. He spots Kate (as Lucia) on a hilltop above, riding on horseback with her brother Hamish (who embodies Ravenswood's nemesis, Lord Ashton).

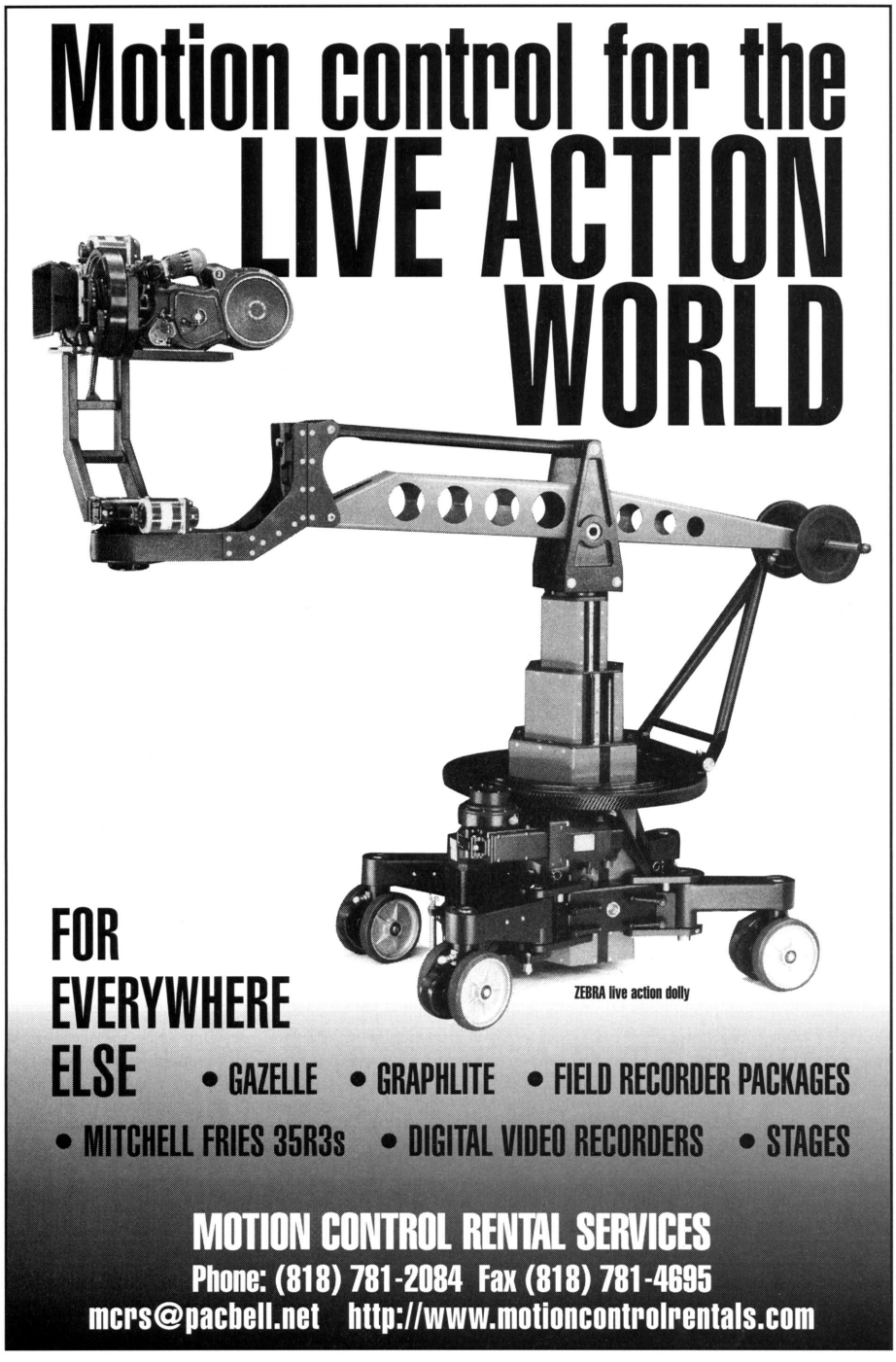
The filmmakers sought a brooding, Gothic aura for this fantasy sequence, and hoped that a weather forecast of grim skies would be accurate, since their tests had shown that dark clouds make for vivid scenery when transferred to 35mm. Unfortunately, the day of the shoot was quite bright with clear blue skies, forcing Aukema to combat the contrasty conditions with plenty of fill (created with six 6K Pars with full-spot lenses and 20' x 20' bounce cloths). To further effect a more monochromatic, dreamlike atmosphere, he also manipulated the camera for lower contrast and color desaturation, and continued to alter his settings — even in mid-shot — as the volatile skies dictated.

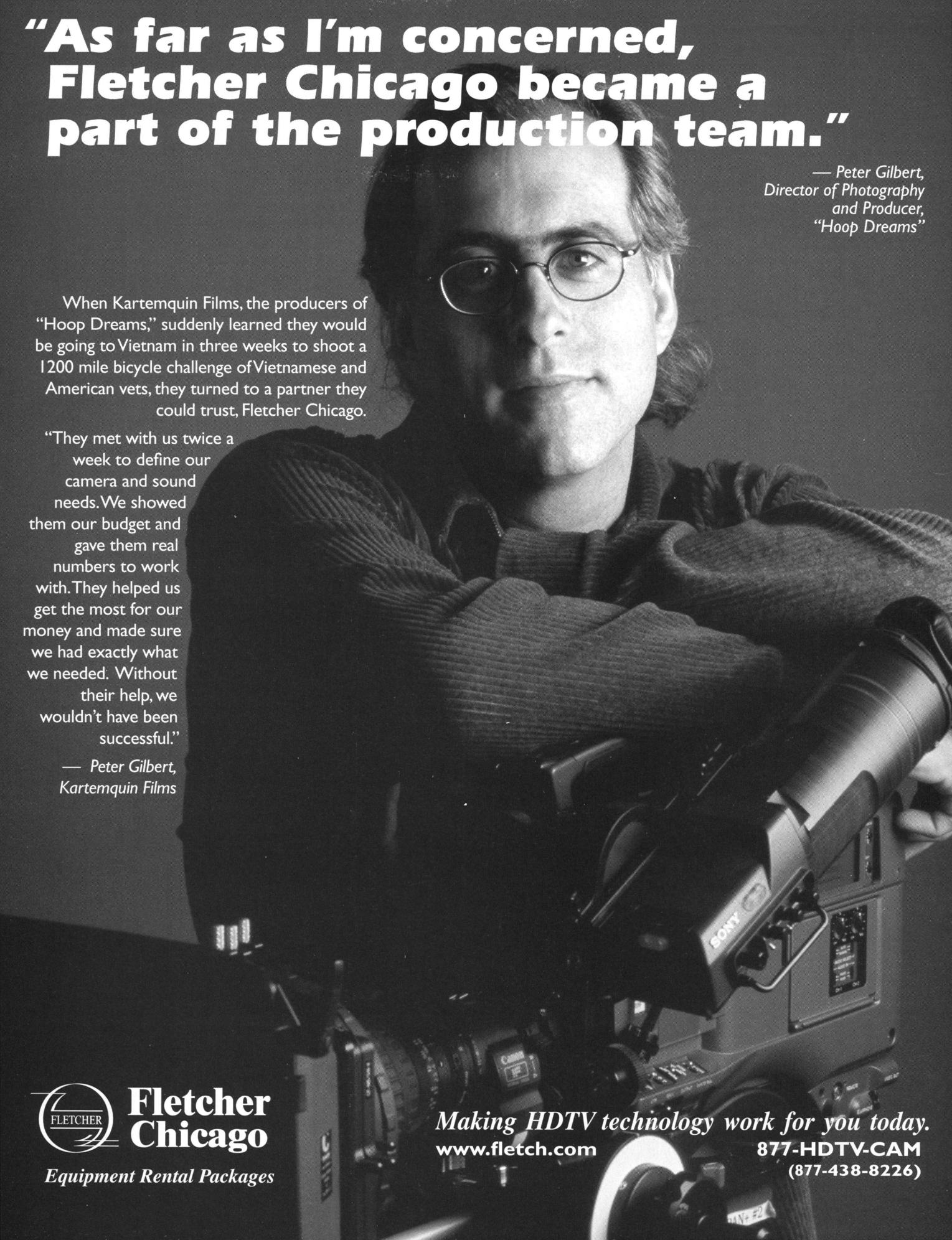
Boyd credits American video-installation artist Bill Viola for inspiring one of *Lucia*'s most abstract and striking images: the apparition of a woman who has been stabbed by her Ravenswood-bred lover and thrown into a lake. The ghost (played by Spanish dancer Anna Pons Carrera, who also choreographed the underwater sequence) arises from her watery grave and makes her appearance in the contemporary narrative by surfacing in an Edinburgh Commonwealth pool, where she warns Kate of impending tragedy.

In order to film the surreal scene, divers were first brought in to line the pool's blue floor with black plastic, thereby providing a suitable working background. Because the pool had built-in underwater portholes (designed for the use of diving-competition judges), Aukema was able to primarily light the sunken action with 6Ks shining through the glass, providing plenty of punch and separation. He photographed the phantom's emergence from atop a diving board, where he found it tricky to "control the camera while lying on my stomach and pointing it straight down."

The wraith's appearance allowed Boyd to exploit the many possibilities offered by the digital postproduction suite. He first processed the image for a slow-motion effect, increased the grain, varied the color levels, and shifted the hue, eventually turning the water completely red to suggest a lake of blood. "It's amazing to be able to have eight different gradations of color tones," Boyd attests. "We were able to achieve something that could not be done photochemically — to completely and effectively alter the way the color was being changed from one four- or five-second section to the next."

Exploiting the wide palette before them, Boyd, online editor Soren Lennert, and assistant Rasmus Worsoe lined up at the controls, working simultaneously to alter the images during playback; each color change was cued by Amanda Boyd's opera vocal and Kiran Shiva Akal's contemporary score.




"As far as I'm concerned, Fletcher Chicago became a part of the production team."
— Peter Gilbert, Director of Photography and Producer, "Hoop Dreams"
When Kartemquin Films, the producers of "Hoop Dreams," suddenly learned they would be going to Vietnam in three weeks to shoot a 1200 mile bicycle challenge of Vietnamese and American vets, they turned to a partner they could trust, Fletcher Chicago.
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Both Boyd and Aukema are excited about their digital video experimentation on *Lucia*, though they concede that the technology had its limits — for example, they had to avoid panning across the long vertical and horizontal lines of expansive landscapes because of aliasing artifacts. As Aukema points out, however, *Lucia* was shot two years ago, whereas the current high-def Sony cameras (with their 2,000,000-pixel chip set and superior resolution) have eliminated those shortcomings. Confident that digital cameras will soon become a major narrative moviemaking production tool, the cinematographer is pushing for digital production on two features he's slated to shoot this year in South Africa. "If you're shooting 35mm and you've got a big budget, all things are possible," Aukema concedes. "But if you're really tight, digital cameras are impossible to ignore, given the flexibility in the way you can control the light coming through the lens."

Though the filmmakers felt that the benefits of digital production exceeded their purely economic concerns, they in no way believe that the electronic process will usurp the photochemical one — different productions will always dictate different technologies. A case in point is Boyd and Aukema's next collaboration, a British gangster film that they've agreed would be best served by 35mm film. "It's extremely important to not use digital video as though you're trying to mimic or duplicate the look of film," the cinematographer insists. "It's a totally new medium given with which we can explore and various looks that were not previously possible."

However, Aukema is also thrilled by the exponentially expanding capabilities of digital video. "Film has been in development for the last 100 years, and it's really at its peak," he opines. "Digital technology is just starting, and the developmental curve is *extremely* steep."

This expressive, lifelike face is just an example of the high-end, CG-character animation being executed with LifeF/x, a new tool devised by the digital division of Pacific Title/Mirage Studio.

Images courtesy of Pacific Title/Mirage.

More Human Than Human

by Debra Kaufman

With a gleaming eye, the Jester tilts her head and speaks to the camera. An overhead light illuminates the texture of her peaked cap, which casts shadows on her skin, and with each muscle-moving syllable, fine wrinkles crinkle up around her eyes and mouth. One would swear that she's real, but this royal court clown is actually a digital actor brought to life onscreen by LifeF/x, a proprietary system created by Hollywood-based Pacific Title/Mirage Studio (PTM).

LifeF/x is only one of the new digital tools now housed at PTM's Digital Division, which is headed up by William Plant. It's no coincidence that Plant, who's been on board at PTM for a few months, was just named president. As founder of The Production Plant, a Los Angeles-based CGI character-animation company, and former head of production for Jim Henson's Creature Shop, Plant is well-suited to take PTM's Digital Division to its stated goal of becoming a preeminent creator of digital characters. "The digital vision is oriented towards character animation at all levels," Plant explains. "We cover the broad spectrum of character animation, from pseudo-2-D to the ultra-photorealistic. Every story needs a player, and we aim to be providing those players at every level."

PTM's Digital Division currently employs 82 people, 32 of whom are animators. Empowered by a mix of SGI Octane and Windows NT platforms, PTM's keyframe animators rely on both Alias/Wavefront Maya and Softimage for their 3-D CG animation, as well as a state-of-the-art Lightning II recorder and Genesis scanners.

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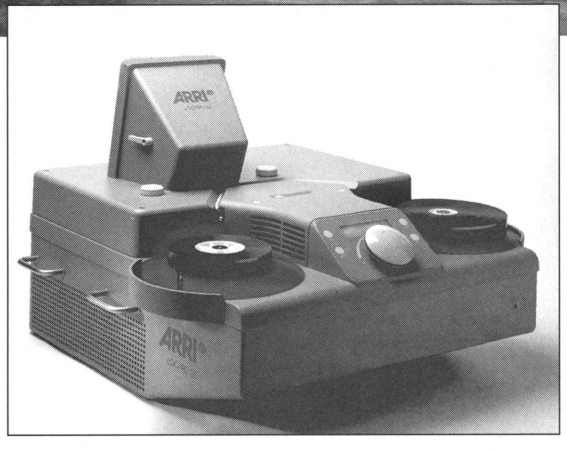

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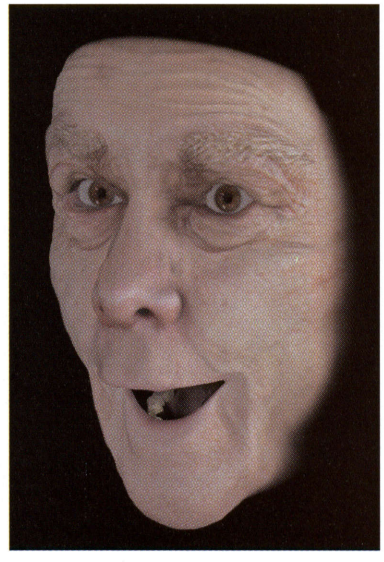

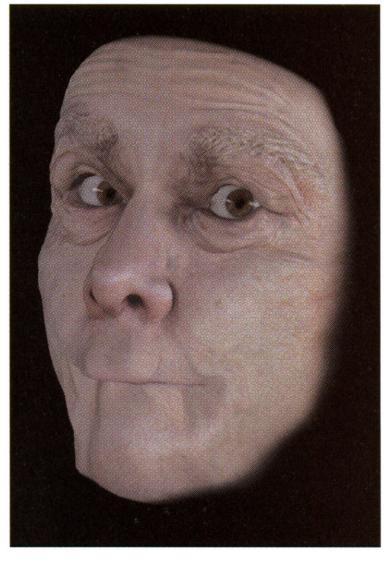

shelf digital gear, which offers numerous interesting mix-and-match combinations for characters and environments within the digital and real-life realms. The equipment's resolution independence also means that the resulting characters and environments can be targeted toward a broad spectrum of media.

This new tide of events was jump-started in October of 1997, when the venerable Pacific Title & Arts Studio was acquired by Mirage Technologies Inc., in equal partnership with the publicly traded firm Safeguard Scientifics, Inc. Since that acquisition, Pacific Title & Arts morphed into Pacific Title/Mirage Studio, headed by co-chairmen/co-presidents Dr. Ivan Gulas and Michael Rosenblatt. The two men brought an unusual mix to Hollywood's traditional method of business: Gulas, a former clinical psychologist who is still a faculty member at Harvard Medical School, has an extensive background in neuropsychology and correlating behavior with emotional expression; for his part, Rosenblatt co-founded the Atlantic Entertainment Group, and has also executive-produced numerous feature films.

This new ownership resulted in a significant expansion of Pacific Title's optical and digital divisions, including the addition of a team of 3-D animators formerly employed by Warner Digital. In its newly expanded version, the Optical Division (overseen by Phil Feiner) provides titles, traditional opticals and visual effects to an estimated 80 percent of all Hollywood features.

While the Optical Division has maintained the course that Pacific Title set in 1919 and has developed over the decades, PTM's Digital Division is blazing new ground. One of their biggest innovations is the LifeF/x Digital Animation System, which has been on the boards for some 15 years. Based on a patent-pending software/hardware system, this new toolset is designed to help create both photorealistic facial animation and computer-generated characters.

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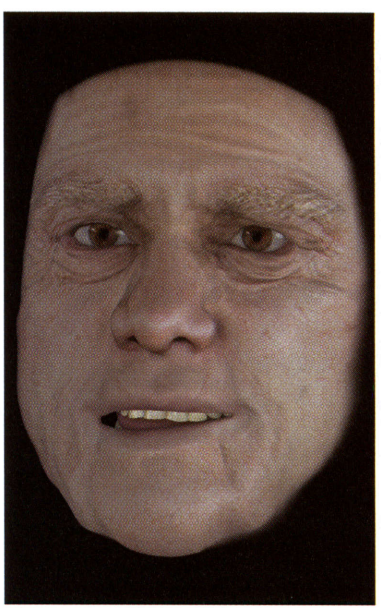
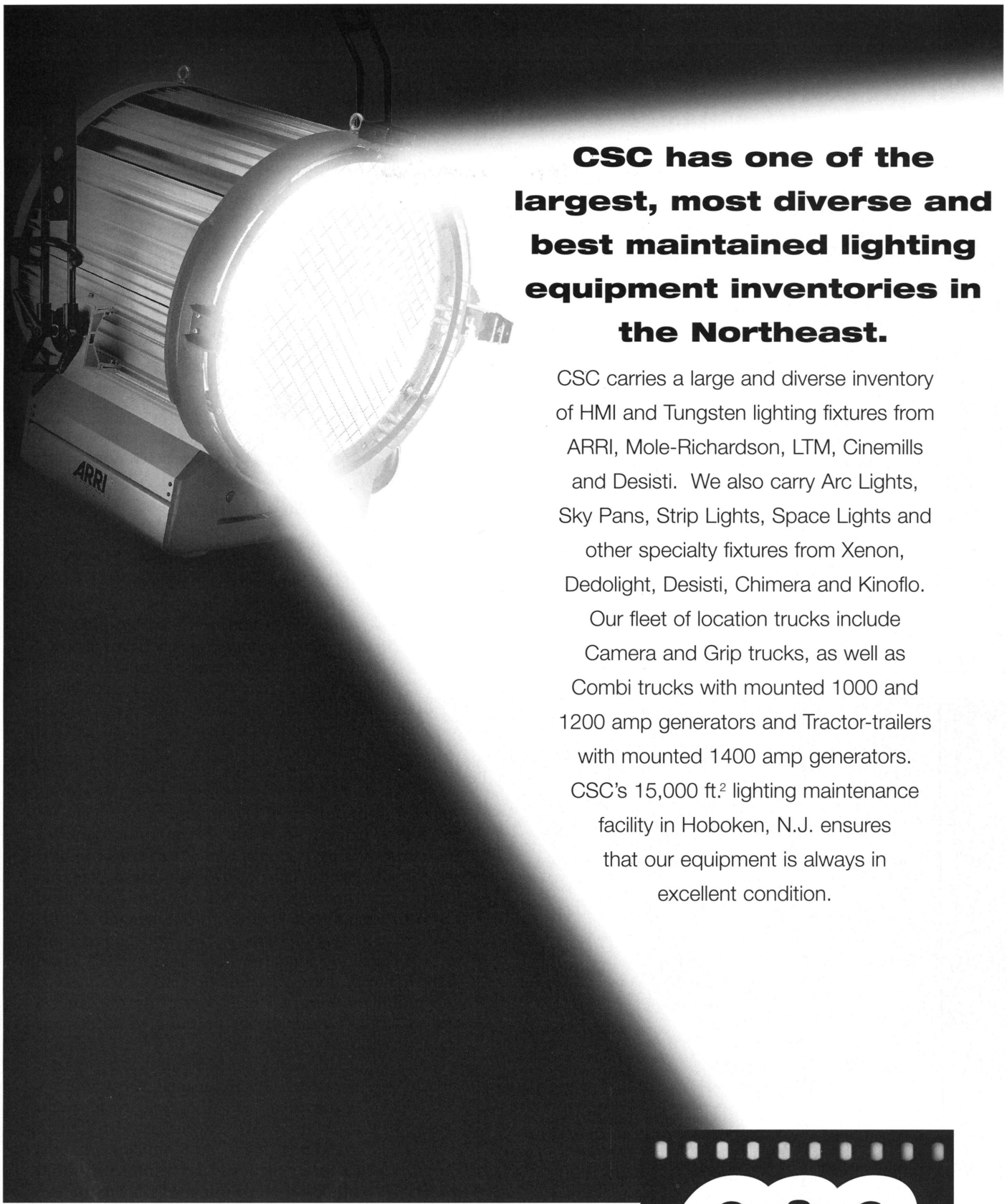
performing virtual surgery in military applications. PTM's founders describe this tool as a "breakthrough biological computer-aided design system that enables the creation of the most photorealistic digitally animated humans and other life-forms available today."

Based on extensive anatomical research, the LifeF/x system uses the physical and graphical properties of biologically accurate tissue, muscle structure, and bone representations, via information acquired and generated by the patent-pending LifeF/x E-motion Capture system, which utilizes stereo HDTV cameras to re-create an actor's performance in high detail at 60 fps. Proprietary software then utilizes the stereo-vision data to reconstruct the image in 3-D CG.

The result is that LifeF/x models provide an exact computer simulation of the muscles, fat, and nerves lying under human skin. For this reason, LifeF/x is capable of generating digital actors that display "the natural nuances" of real expressions and emotions. "It's a completely different way of doing facial animation than anyone else is doing at the moment," explains Plant. "The model is a high-order finite model. The reason why the wrinkles work so well around the eyes and mouth is because they are an exact computer simulation of what happens on the human face. The





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program knows the subcutaneous levels, and that the thickness of fat around the eyes is thinner than on the cheeks — that's what makes the effect so compelling."

The CG models themselves — created via a process in which LifeF/x is linked to Alias/Wavefront Maya — require a lot of computer power to create. But because it each model is "intelligent" (due to the proprietary LifeF/x code), the amount of data needed to drive the model is actually small, meaning that LifeF/x is both "bandwidth- and budget-friendly," says Plant. Currently, LifeF/x is only a facial-animation product, but Plant reports that PTM, with its R&D facilities in Auckland, New Zealand, is "nearly two-thirds of the way through development to animate the rest of the body."

PTM's Digital Division is also involved in real-time puppeteering, which is a natural progression for Plant, who honed his expertise in this type of specialty animation at Henson's Creature Shop. It's no surprise that Henson was the first to take the idea of traditional puppeteering into the digital arena and devise a specialized form of motion-capture. In the method's latest incarnation at PTM, Plant has developed a sophisticated puppeteering device that relies on a Cray-linked Onyx array.

Plant relates that PTM has a variety of "extremely sophisticated techniques that allow performers and puppeteers to interact with computers in a very simple way." Among the numerous input devices, the most common is a proprietary joystick/Waldo rig that allows for real-time animation of a CG character's facial expressions, head and hands. The benefits of a puppeteer being able to perform and view real-time results on the monitor are quite obvious: the director can direct CG characters as if they are the real McCoy.

With this resolution-independent technique, PTM can dream up a range of character styles and also puppeteer multiple characters simultaneously. Logic suggests that the end result will be multiple CG characters interacting with each other and within the real world. "That means we can have live actors doing a spontaneous performance with sophisticated CG characters," notes Plant. "We put the word 'spontaneity' into the animation vocabulary — they don't usually go together. Our goal is to shorten the distance between the director and the animator. The philosophy is that you can direct a character in real time, as though you're dealing with another actor."

At PTM, motion-capture isn't limited to puppeteering which, with its focus on the head, mainly provides facial emotions and lip-synching. For animations that take place from the neck downward, PTM uses Ascension Technology's Flock of Birds magnetic motion-capture system, which enables two characters to be captured simultaneously. The NASA-designed Cyber Glove lends high-resolution movement to the hands and fingers. In

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this combination of puppeteering and body motion-capture, the puppeteers provide facial expressions, while the actors animate the body.

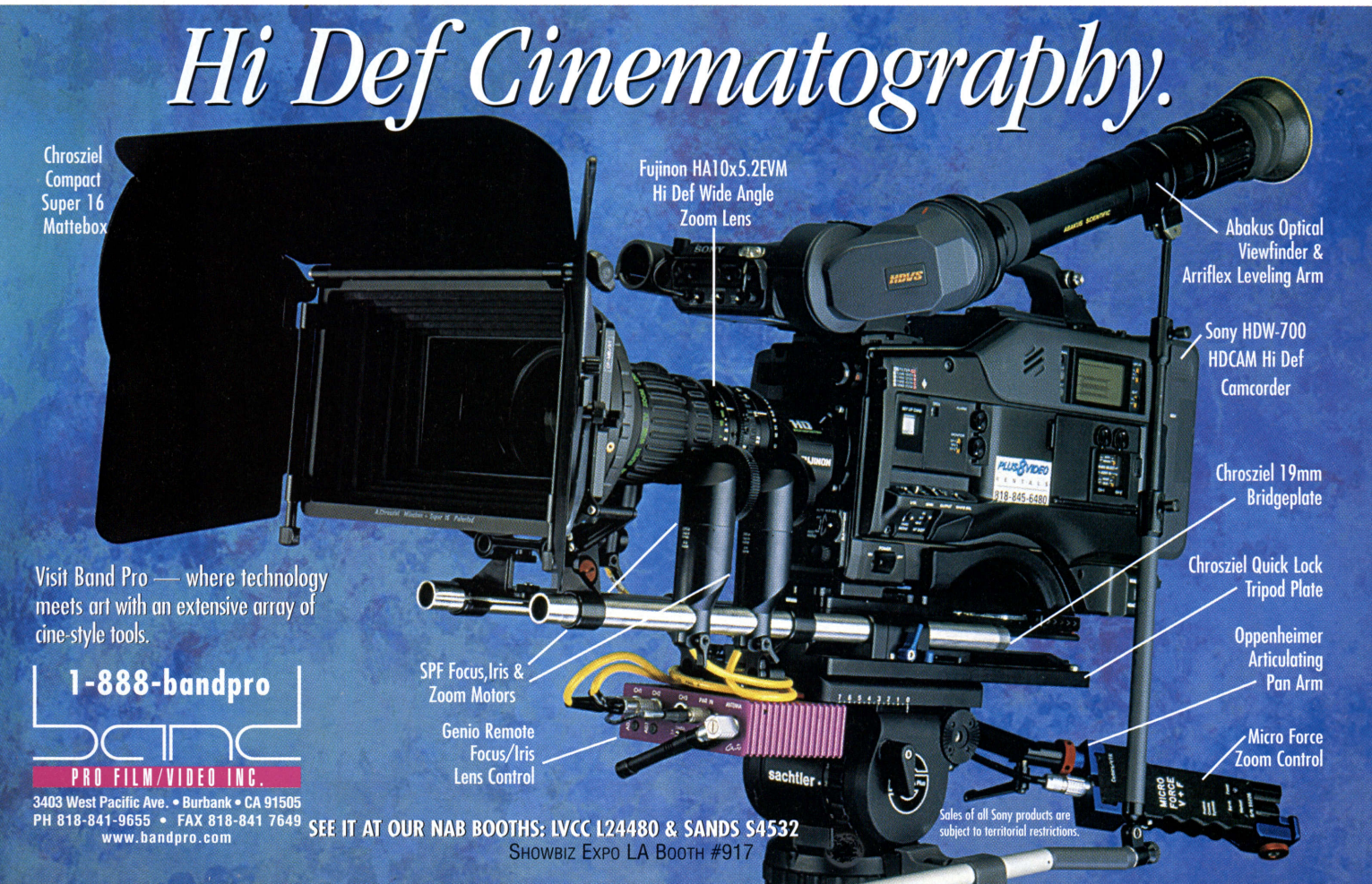
In designing this system, "we started with a blank sheet of paper, and addressed all of the problems inherent in the current pipeline of animation by coming up with creative technical solutions," Plant says. "Feedback is a major issue with animation, and we've shortened that to the point that it's in real time. The director can make value judgments at the time of performance. In response to the criticism that motion-capture always looks like a man in a suit, we also have 'squash' and 'stretch' functions built into our [motion-capture] software, thus allowing for real-time dynamics. This is a pretty sophisticated scaling technique that allows a human performer's grace and beauty to be applied to geometry that may not be related to human anatomy."

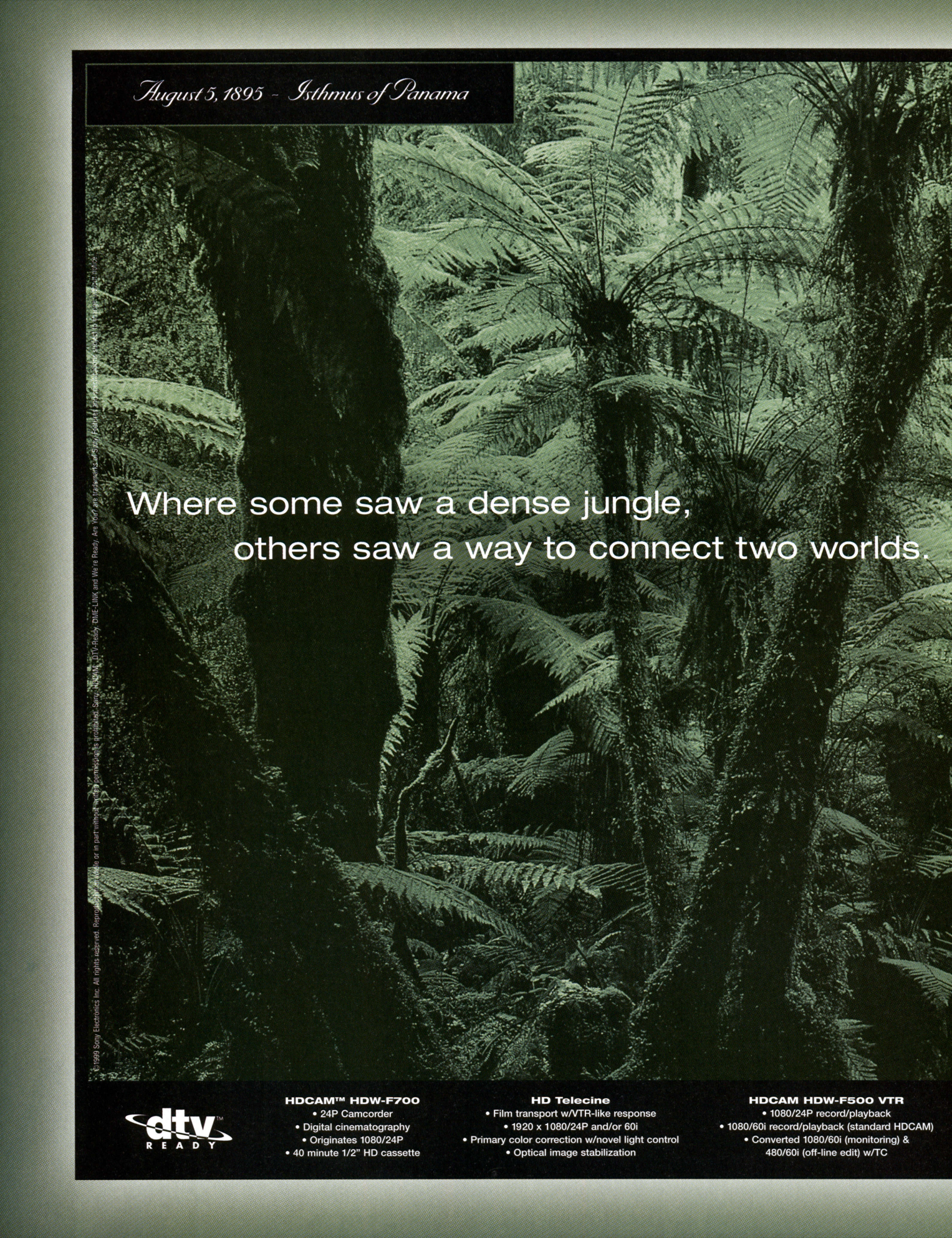
PTM's Digital Division recently added yet another powerful CG tool: the Orad O-Set high-end virtual set, which offers resolution up to High-Def. With this, PTM can put its virtual characters in a virtual set with human actors — all in real time. Though the Orad virtual set system has yet to be fully utilized, Plant reports that PTM is already in discussions to produce two game shows and a 45-episode series — totally in CG, using a combination of puppeteering and the Orad software.

With all of these tools in place, PTM's Digital Division is on a quest for the digital animator's Holy Grail — the creation of a walking, talking, photoreal digital human — and the ultimate goal of "developing character-driven franchises that are exploitable in all available media." Within the resolution-independent digital world, this means that a character could migrate across all media platforms — from the Internet to broadcast television or an Imax film. "Within the next year or two, our orientation is to get into creating content," Plant reveals. "We're very interested in co-ventures or joint productions."

In the meantime, PTM's Digital Division is open for business. Some recent projects include commercial productions for Captain Crunch breakfast cereals and Maytag. The company is also delivering an "out-of-body" sequence for the feature film *Bruno,* which marks the directorial debut of actress Shirley MacLaine.

"To make illusions, we have to be able to use all of the tools in the toolbox," Plant acknowledges. "We're flexible enough to pick and choose the proper tool. One effect might require the ultra-realism of Life/Fx, but that level of realism isn't necessarily an advantage for a children's TV show. There is a point where you'll need animatronics, and the ability to seamlessly blend animatronics with digital characters. It all depends on what the client needs and wants, rather than our insistence on a particular technical approach." ■





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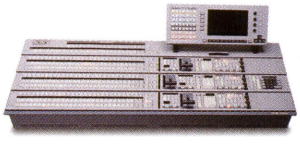

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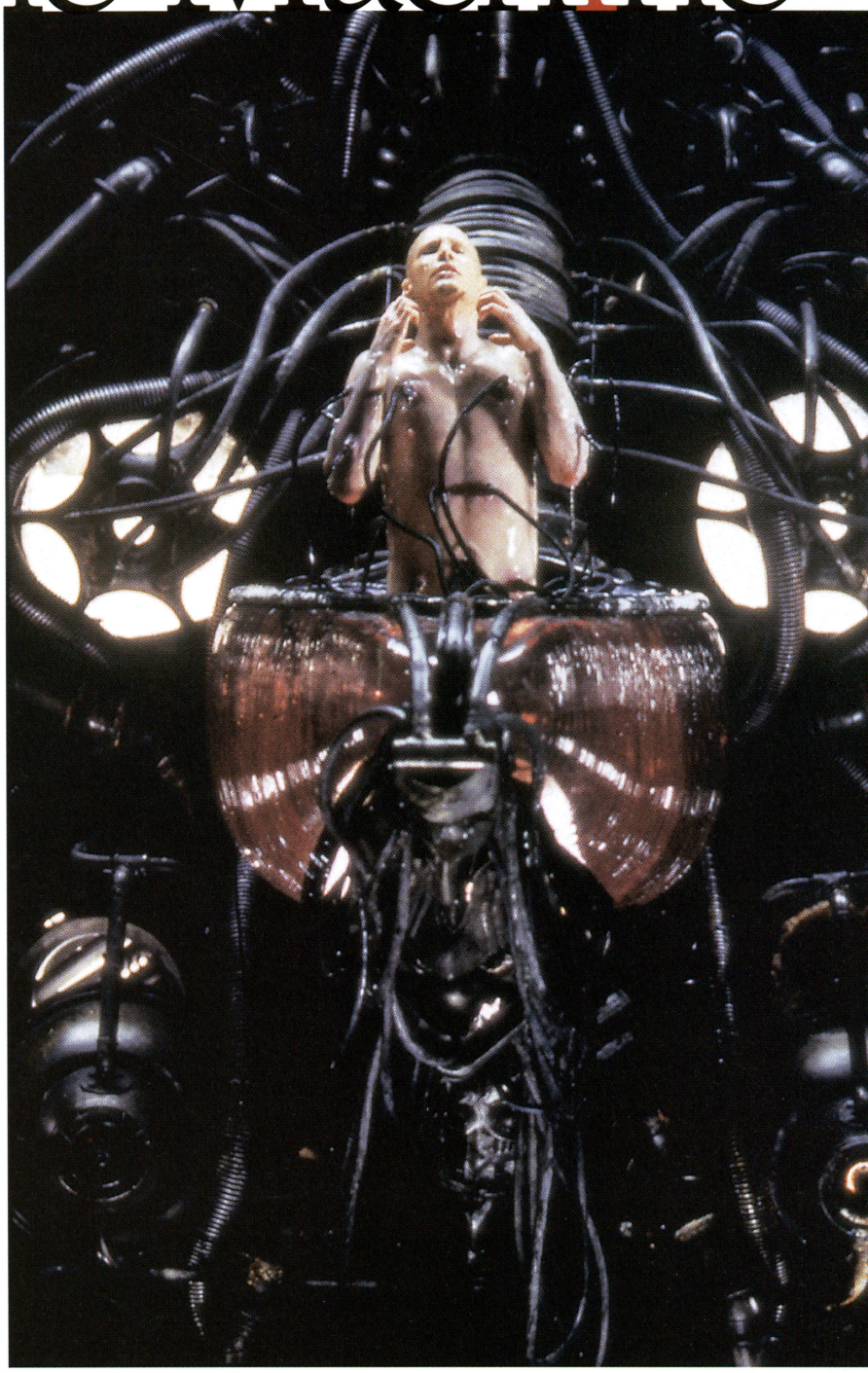
Welcome to the Machine

Directors Larry and Andy Wachowski reteam with cinematographer Bill Pope on the futuristic, eye-popping action thriller *The Matrix*.

by Christopher Probst

Photography by Jasin Boland



Computerized gadgetry has assumed such an increasingly pervasive role in our everyday lives — from microprocessor-controlled automobiles to hyperspeed Internet e-mail and cell phones — that one might wonder if the tail is wagging the dog. With the impending end of the millennium inducing waves of paranoia and Y2K computer-crash hysteria, it's not surprising that technophobic films such as Stanley Kubrick's *2001: A Space Odyssey* (1968) and James Cameron's *The Terminator* (1984) seem ever-more accurate in their depictions of microchips run amok.

The Matrix, a new film from sibling filmmakers Larry and Andy Wachowski, offers an even grimmer vision of the future. Born in Chicago in the mid-1960s, the Wachowskis grew up on a healthy diet of comic books, Japanese animation and films of all kinds. While working at construction jobs, the brothers began

to write comics and screenplays that combined the seemingly dissimilar aesthetics of their favorite mediums. Before making their directorial debut in 1997 with the dark and stylish heist thriller *Bound* (which they also co-wrote), the duo had already penned the script for *The Matrix*..

"Our main goal with *The Matrix* was to make an intellectual action movie," Larry explains. "We like action movies, guns and kung fu, but we're tired of assembly-line action movies that are devoid of any intellectual content. We were determined to put as many ideas into the movie as we could, and purposefully set out to try to put images up on the screen that people haven't ever seen before."

Out of the Void

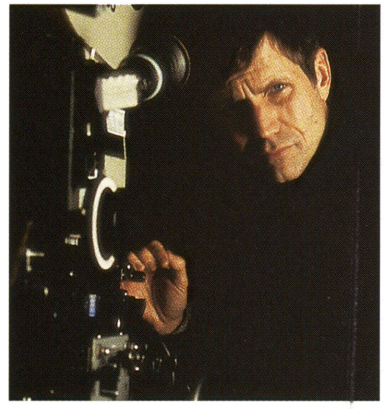
For years, however, the script for *The Matrix* languished in limbo, because many in Hollywood couldn't grasp the tale's highly complex narrative and extravagant visual elements. "Hardly anybody in town even understood it," says Larry. "It became almost a running joke. People thought it was too complicated and too dense. "The premise for *The Matrix* began with the idea that everything in our world, every single fiber of reality, is actually a simulation created in a digital universe," he explains. "Once you start dealing [narratively] with an electronic reality, you can really push the boundaries of what may be humanly and visually possible."

To help distill this concept into a more readily understandable form, the Wachowskis hired several comic-book craftsmen, including popular *Hard Boiled* artist Geof Darrow, to hand-draw the entire film as a highly graphic storyboard bible. "We don't really like the way conventional storyboards are done," Larry reveals. "Instead, we brought in some friends of ours to draw out every single action beat, visual moment and stylistic shot in the film. Then, for months, we pored over every frame, exploring how to attack each shot. This also allowed us to be very specific, in terms of the budgeting and visual-effects requirements."

This graphic representation of the film also became an invaluable tool for director of photography Bill Pope, whose common interest in comic books had previously landed him the director of photography assignment on the Wachowskis' *Bound*. Pope recalls, "They had seen and loved [the 1993 horror-fantasy film] *Army of Darkness*, which I shot for director Sam Raimi. They called me in, and we had a terrific meeting. I think they hired me because I read comics and knew what they were talking about whenever they mentioned a particular title. In fact, during our meeting, there was a copy of Frank Miller's *Sin City* on their desk, so I asked, 'Is that what you want the film to look like?' We were all impressed by Miller's use of high-contrast, jet-black areas in the frame to focus the eye, and his extreme stylization of reality. I had long wanted to do something that stylized on film."

Not incidentally, "stylization" formed the basis of Pope's early career. A 1977 graduate of New York University's film program, the cameraman recalls, "Film school was pretty intense back then, because there were only a few of us who concentrated on cinematography. Everyone else wanted to direct. In my class, it was just Ken Kelsch [ASC] and myself, and in the class behind us there was only [director and former cameraman] Barry Sonnenfeld. The three of us shot everybody else's films. After graduating, I shot a few of those early videos that were shown only on closed-circuit TVs in clubs. When MTV came along in the early 1980s, and everybody began making videos, people said, 'Get Bill Pope, he's shot these things!' Suddenly, I was a director of photography."

Pope would spend the rest of the decade photographing several hundred videos. Along the way, he earned an MTV Award for Best Cinematography for his black-and-white camerawork on the Sting clip "We'll Be Together Tonight." He then segued into commercials and features. "In 1989, Sam Raimi gave me the chance to shoot [the sci-fi fantasy] *Darkman*," Pope remembers. "I only got the job because Barry Sonnenfeld told Sam to hire me. Fortunately, Sam just said, 'You're hired, let's go!' Otherwise, I never would have gotten a feature. For a long time, music videos were considered the illegitimate children of the filmmaking industry. It wasn't until the late Eighties and early Nineties that music-video cinematographers were even considered



legitimate enough to shoot commercials. After I shot *Darkman*, though, I was able to concentrate on shooting movies and commercials." Pope's other feature credits include *The Zero Effect*, *Gridlock'd*, *Clueless* and *Fire in the Sky*. Additionally, he shot the pilot for the television series *Maximum Bob*, which was directed by Sonnenfeld.

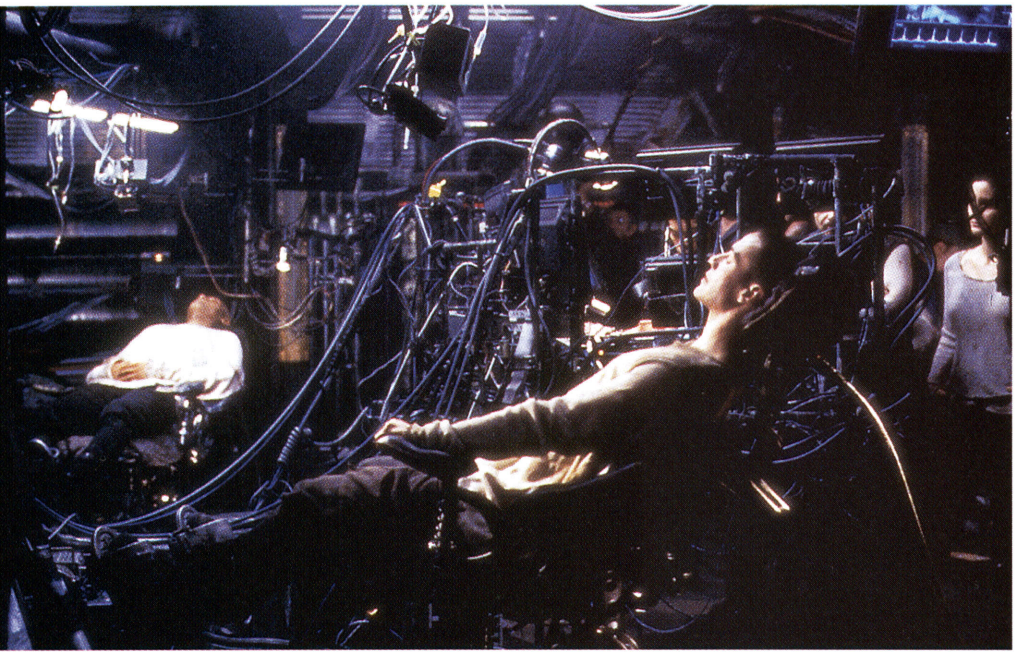
Technology Takes Over

The story concept that propels *The Matrix* is intricate: the year is 2197, and human reality is merely a computer-simulated environment. "At some point in the past, artificial intelligence took over the world," Pope relates. "In an effort to regain control, humans blacked out the sun,

Opposite: After awakening from the cyber-manufactured reality of the Matrix, Neo (Keanu Reeves) discovers the truth behind the computer's plot to harvest mankind's energy. This page: Director of photography Bill Pope has photographed both of Larry and Andy Wachowki's directing efforts, *Bound* (1997) and *The Matrix*. Says Larry about their collaborations, "There's a certain [compositional] power in having black on the screen, and Bill's the sort of cinematographer who really enjoys using black. He also likes moving the camera; those two elements fit really well into the way we wanted to make *The Matrix*."

Photos courtesy of Warner Bros.

Welcome to the Machine



Above: Aboard the craft *Nebuchadnezzar*, human rebels tap into the Matrix to fight their binary oppressor. Right: Working with production designer Owen Patterson, key grip Ray Brown devised a camera platform that could be built into the set (center of frame). By mounting a MovieTech Felix remote crane on it, dolly grip Mick Vivian could easily swing the camera over any portion of the set.

because the computers were running off of solar power. But the machines outsmarted us and took over our bodies, placing them in pods and using them as batteries — drawing off the BTUs we produce. While we float in a liquid, they project into our brains the world we think we live in, which is called the Matrix. Everything we do in our lives, every day, is only a computer simulation of reality.

"Certain individuals have figured this out, however, and are waging a battle against the computers. These rebels fight within the Matrix against Agents who are themselves computer programs. The Agents can do anything, become anybody and change any natural law, but the humans can't. One of the main protagonists, Morpheus [Laurence Fishburne], is looking for an individual who reportedly can do what the computers can: walk through the Matrix and change reality. Morpheus believes that this individual is Neo [Keanu Reeves].

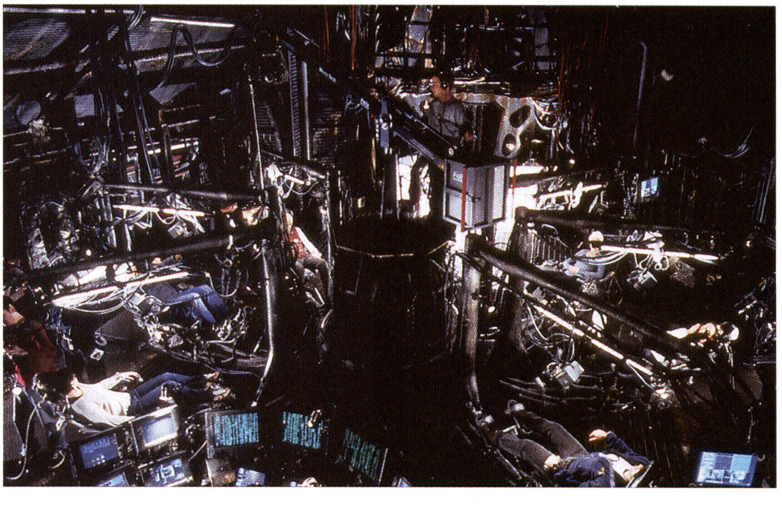
"It's a pretty complicated Christ-story," Pope admits, "but for the Wachowskis and myself, one of the best kinds of comic books is the 'origin' story, which outlines the beginnings of a superhero like Daredevil or Spiderman. *The Matrix* is the origin story of Neo."

Adds Larry Wachowski, "We wanted the film to be a journey of consciousness. The main character that takes the audience on this journey is Neo, who initially knows only as much about the movie's world as the audience. We soon discover, however, that the characters in the film can instantaneously have information downloaded into their heads; Neo can, for example, suddenly become a kung fu master like Jackie Chan!

"Andy and I love Hong Kong action films, and we both feel that they're miles ahead of American action films in terms of the kind of excitement that the action brings to the story. American filmmakers have gotten to the point where they create their fights in the editing room. Those types of sequences are just designed for a visceral, flash-cut impact, and the audience's brains are never really engaged. There's a bunch of quick cuts — *bam! bam! bam!* — and then it's over; the fighting never involves the audience on a story level. Hong Kong action directors actually bring narrative arcs into the fights, and tell a little story within the fighting."

A Ballet of Violence

With this Eastern aesthetic in mind, the Wachowskis hired renowned Hong Kong director/stunt choreographer Yuen Wo Ping to coordinate all of the elaborate fight sequences in *The Matrix*, and also to serve as the personal martial-arts trainer for the four principal cast members. "In order to pull off these very elaborate fight scenes," states Larry, "we had to take four Western actors and teach them kung fu for four months before we started shooting. In Hong Kong, Wo Ping usually directs his action scenes and picks all of the camera angles. For our fights, we talked to him about what the actual storyline of the fight was, and



he would then go off and choreograph it. Once he had the whole 'dance' of the fight, we'd ask what he would recommend for every shot. We'd then add whatever flourishes, camera moves or other angles we wanted on top of that."

An integral part of Wo Ping's fight choreography is his legendary use of wire-harness stuntwork. Truly an awe-inspiring feat of visual trickery, the technique allows actors to seemingly defy the laws of physics as they leap, fly and twirl around their opponents in battle. "Wo Ping's wirework is the best," Larry attests. "Using the wire system, you can improvise very easily. They can put a wire anywhere and hook somebody up to it at any moment. They don't need a big rig — just a bunch of guys who grab hold of it and say, 'Let's go!' It's very fast, fluid and safe. In Hong Kong kung fu films, they basically put people on wires for everything, from jumping to standing up or even running. It makes all of the movement look very graceful and kind of surreal. We thought that was perfect for *The Matrix*.

"We also tried to detail the action in a way that isn't really done in Hollywood anymore," Larry continues. "There are many incredible and beautiful images in violence, and I think violence can be a great storytelling tool. [Filmmakers] have come up with an incredible language for violence. For example, what John Woo [*The Killer, Face/Off*] does with his sort of hyper-violence is brilliant. He pushes violent imagery to another level. We tried to do that with *The Matrix* as well."

Imagining the Future

With the complex requirements of the film's serpentine narrative and the grandiose environments and events the Wachowskis had envisioned, the producers decided to shoot the entire film in Sydney, Australia. Utilizing virtually every stage in the city — including all of Fox's stages at their new studio facility, as well as several converted warehouses — the production quickly became a formidable presence. Among the hundreds of Australian crewmembers on the show were production designer Owen Paterson, costume designer Kym Barrett, gaffer Reg Garside, rigging gaffer Craig Bryant, key grip Ray Brown, camera operator David Williamson, focus-pullers David Elmes and Adrien Seffrrin, clapper/loader Jason Binnie and loader Jodi Smith, as well as second-unit director of photography Ross Emery and underwater cameraman Roger Buckingham, ACS.

In adopting a Hong Kong fight-choreography aesthetic, the Wachowski brothers hired famed director/stunt coordinator Yuen Wo Ping to design the film's high-energy fight sequences. Says Pope, "These fights were not shot as Americans shoot fight scenes, in which the camera is usually set over one character's shoulder as another throws a punch, missing the person's face by a mile. Instead, the brothers and Wo Ping insisted that if a character were to hit someone in the face, they had to *really* hit them in the face! You can see every blow, and you can even see the dust coming off the actors' clothes as they're hit!"

"My prep for *The Matrix* consisted of two months of scheduling and rescheduling," Pope recounts. "The Wachowskis were swamped with many concerns because of the film's level of complexity. Everything had to be preconceived and explained. Larry and Andy are naturally reticent people, so that was hard for them. They usually don't want to tell you anything unless they're forced to. During my prep for *Bound*, for instance, I asked them to sit down with me and go through each scene. In the beginning, they'd try to shrug off my questions by saying things like, 'Well the scene is just two guys sitting there talking.' Then I'd ask how they planned on covering it. They'd say, 'Oh… conventionally.' I'd then have to say, 'Okay, let's backtrack… what's the first shot?' Finally, they'd say, 'Well, we'll start on one guy's boot, go up his body, end up on his face in extreme close-up and then whip-pan over to the other person.'

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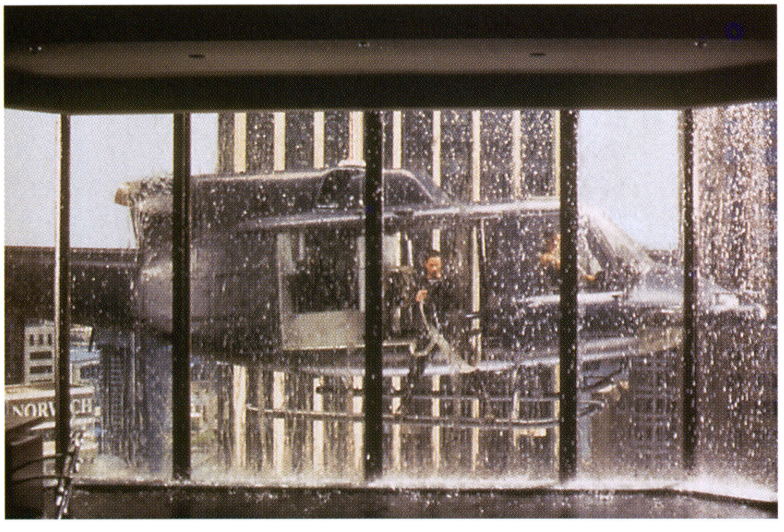


Top: As seen from inside the building set, Neo blows out the room's windows. Bottom: Suspended in front of a 190' x 40' TransLight of downtown Sydney, a full-scale helicopter — sans rotating blades — assails the government building set. Says Pope, "When you stood inside the set, which was a three-story steel structure, there was nothing that told you that you were on a stage. With the helicopter hovering in front of a huge city below, the illusion was totally complete."

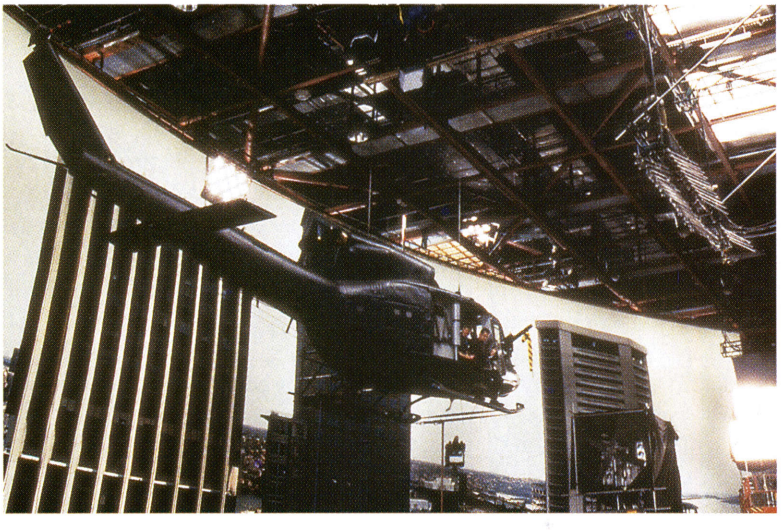
Now we laugh whenever we say 'conventional' coverage. Ultimately, we went through all of *Bound* shot by shot. On *The Matrix*, however, the brothers were so busy during prep that that type of meeting never happened."

Because the entire film was meticulously storyboarded in color, though, Pope did have an understanding of the visual style that the directors wanted to create. "Larry and Andy wanted *The Matrix* to have two distinct worlds," says the cinematographer. "There is the world in the 2197 future — in which we have the pods made by the computers — and then there's the present-day Matrix world, which was designed to be a slightly unappealing reality.

"The sets for *The Matrix* were immense — the biggest I personally have ever seen."

— cinematographer Bill Pope

"The future world is cold, dark and riddled with lightning, so we left the lighting a bit bluer and made it dark as hell. Also, the future reality is very grimy because there's no reason to clean it — only the pods need to be sterile. Because humans haven't actually manufactured anything for a hundred years, anything that had been manufactured is now old and rusty.



"We didn't necessarily want the Matrix world to resemble our present world," adds Pope. "We didn't want any cheery blue skies. In Australia, the sky is a brilliant blue virtually all the time, but we wanted bald, white skies. All of our TransLight backings [for the stage work] were altered to have white skies, and on actual exterior shots in which we see a lot of sky, we digitally enhanced the skies to make them white. Additionally, since we wanted the Matrix reality to be unappealing, we asked ourselves, 'What is the most unappealing color?' I think we all agreed on green, so for those scenes, we sometimes used green filters, and I'd add a little bit of green in the color timing."

Pope photographed *The Matrix* using Panavision Platinum cameras and Primo prime lenses, which he brought with him from Woodland Hills, California. (At the time of production, Samuelson Film Services in Sydney had only recently been acquired by Panavision, and couldn't meet the film's demands.) The cinematographer shot in the Super 35 2.35:1 aspect ratio, utilizing Kodak's Vision 500T 5279 and 200T 5274 stocks. "We shot all of the day exteriors and effects shots on 5274, and used 5279 for all the interiors. I like the look of 79, and I like to see a little grain. I shot in Super 35 partially because I had too many cameras to come up with enough anamorphic lenses, and also because of the sheer size of the sets. I felt that I might have had a little trouble lighting the sets to get the stop we'd need for anamorphic. Regardless, I do like Super 35; I also shot *Fire in the Sky* in that format."

An additional critical factor in the film's lighting approach was dictated by a special photographic technique that the Wachowskis were determined to integrate into the filming. This approach was inspired by Neo's newfound mastery of virtual time and space. Explains

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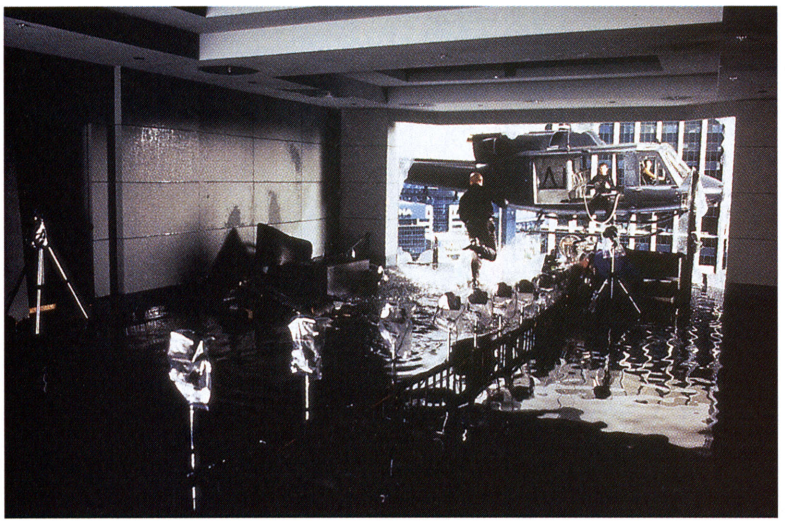

Top: Morpheus (Laurence Fishburne) makes a slow-motion leap to freedom from the clutches of the Matrix's ominous Agents. To film this extreme slow-motion shot, the production utilized Manex Visual Effects' "Flo-Mo" system, which consisted of an array of computer-controlled Canon EOS-A2 still cameras. The resulting frames could be animated and interpolated to achieve any desired frame rate up to 600 fps (see visual effects story, beginning on page 46), Bottom: Morpheus evaluates his odds of escaping as an indoor sprinkler system showers the scene.

Larry, "We wanted to shoot much of the action in super-slow-motion — up to 300 fps. For certain shots, we wanted to shoot high-speed while keeping the apparent movement of the camera at regular speed, which is basically impossible. In preproduction, we looked into the idea of a rocket camera, which we were going to shoot across the set at something like 100 mph while filming at 150 fps, but [visual effects supervisor] John Gaeta came up with a different process that became the basis for these sequences."

(This extreme slow-mo photography, dubbed "bullet time" by the Wachowskis, is detailed in the accompanying visual effects story, beginning on page 46.)

Lighting for Speed

"The sets for *The Matrix* were immense — the biggest I personally have ever seen," says Pope. "We had two camera units working all the time. The first unit shot for 118 days, and the second unit shot for 90. The first 40 days were spent shooting on rooftops in downtown Sydney, where, because of safety issues, we really couldn't put up elaborate lighting or anything that flew. There, I basically used some negative fill, and that was about it — which was fine, because I like to work in a naturalistic way. In general, we'd use lights only for matching purposes, because the weather in Sydney changes rapidly and often."

Australian gaffer Reg Garside expands, "These exteriors were all about logistical problems. We were shooting in the middle of Sydney, which is where all of the city's work gets done. We had to crane generators halfway up the sides of buildings, because we needed 200 or 300 amps of phase power on some of the rooftops. Not only did we have to cater to the lighting, but we also had to provide power for the special effects people, who had these big smoke machines as well."

Moving indoors, Pope and Garside confronted the massive undertaking of lighting the immense sets to allow for the Wachowski's desired 300 fps frame rate for extreme slow-motion shots. Notes Garside, "The high-speed lighting requirements were a big concern, because on the big sets — such as the subway and the government building exterior and lobby — we needed a massive amount of light to be able to shoot between Bill's T2.8 base and the T16 needed for high-speed filming. On some stages, in fact, we had to rig more than 1,000 Par cans in the permanents [to produce the needed levels of light]. I used Par cans a lot, because I could easily control the ambience from T2.8 to T16 just by turning additional units on and off.

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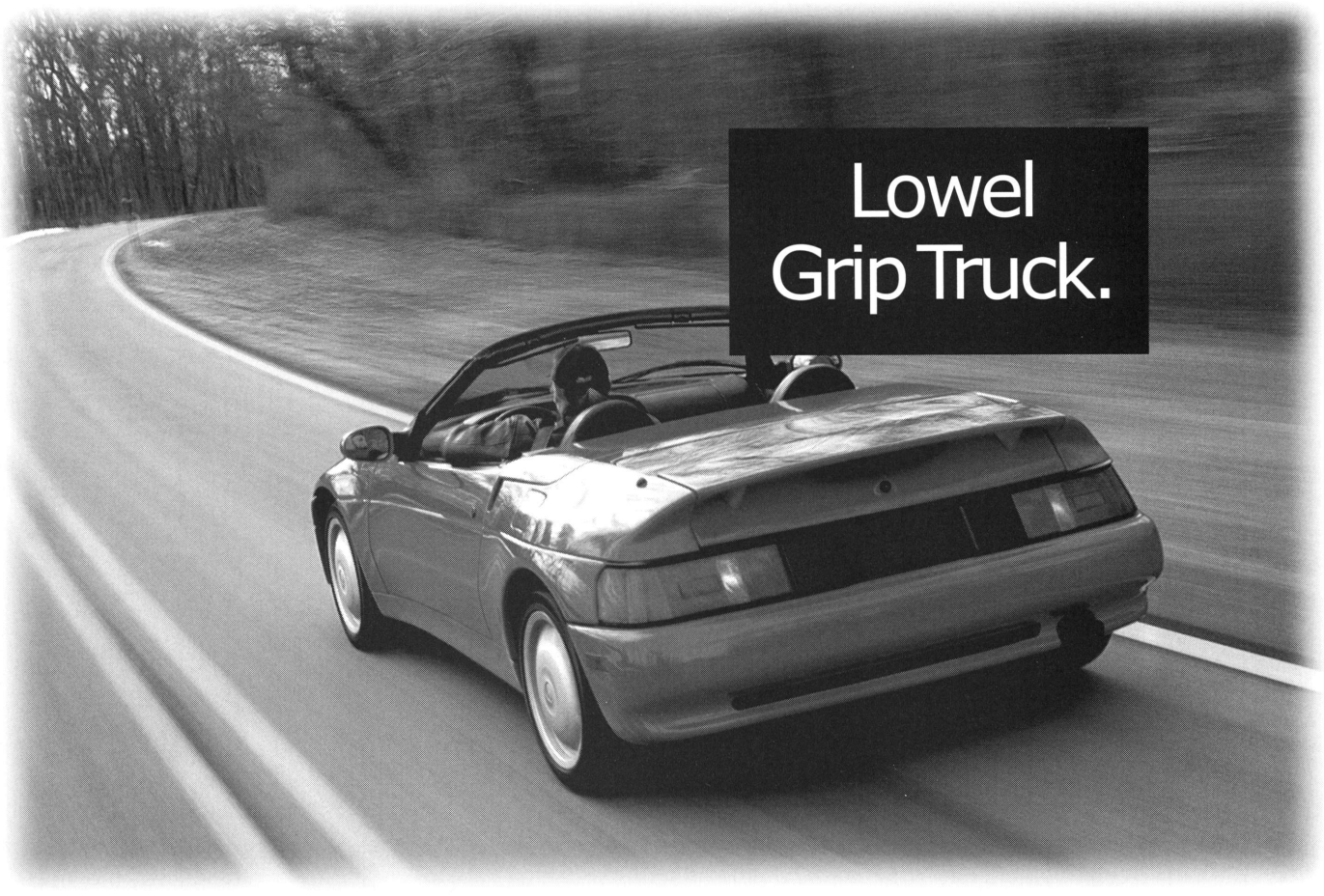

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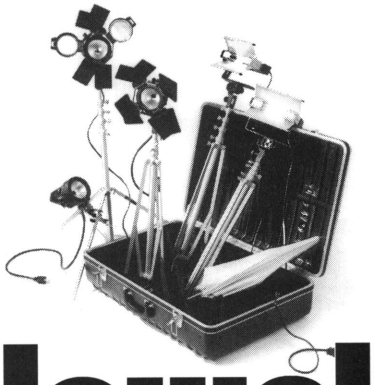

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Also, Par cans are much cheaper than Maxi-Brutes, and although they use the same sort of bulb [a Par 64], I've found that I can rig them in much more weird or difficult places than I can put a Maxi. Having 1,000 Par cans is actually like having 80 Maxis, but we don't even have 80 Maxi-Brutes in Australia!

"For speed and maximum control," Garside continues, "every single light ran through a dimmer rack, so if Bill told me to give him a T8, I could give him a T8 by adjusting a lever on the controls. For a T2.8, you may only use one lamp, but for a T16, you may need 32 lamps. You're really dealing with an exponential doubling-up effect to get the extra stops. Bill actually used a lot of overhead lights through light gridcloth diffusion to create an ambience. So I had [rigging gaffer] Craig Bryant pre-rig Par cans in the roof for an ambience that could get me up to a T16. We then had to build a lot of custom overhead cloths, which we call sails, and virtually hand-fit them into position on the sets."

Pope elaborates, "We shot most of this movie with tungsten lights. Also, by using Par cans, we could change the light level without changing the color temperature, simply by turning units on or off. However, I do like to use Kino Flos on faces for interiors. In fact, I prefer to have Kinos around the actors, because they're a lot cooler. We used truckloads of Wall-O-Lites and 4' by 4' Kinos on this film."

Harvesting Humanity

For a key set depicting the future reality of mankind, production designer Owen Paterson (*The Adventures of Priscilla, Queen of the Desert; Welcome to Woop-Woop*) constructed several of the incubation pods in which humans are held in stasis while their energy is tapped by the computers. "We had about six of these liquid-filled pods," Pope describes. "Each was just large enough for a human being, and jutted out of a 30' by 60' wall that Owen built. Each pod was about 15' off the ground, which necessitated the building of numerous working platforms for the cast and crew. We stayed with the cooler light — ¼ CTB on the tungsten lights — and once again used a big soft toplight, about 200 Par cans coming through light gridcloth. We also had Kino Flos coming up from below [to suggest an infinite number of the pods above and below the six practical props]. We also had Lightning Strikes units popping off occasionally, because there is supposed to be a lot of static electricity in the future reality. Additionally, Reggie, Owen and I worked hard to build some Kinos and MR-16s into the pods themselves."

"Lighting the pods was pretty tricky, because they were full of this red, liquid goop," Garside elaborates. "We wanted to make them glow, so we used underwater-safe Kino Flo units from Hydroflex, which we built into the base of each pod. That technique worked really well for wide shots. When we got in closer, we used the same interior lighting, but since the pods were made of a clear Perspex material, we enhanced their lighting by shining 1K babies up from below."

The Rebels' Lair

Once Neo is awakened from his pod-bound limbo and shown the true fate of mankind by Morpheus, he joins a small band of rebels that operate outside the controls of the Matrix. The members of this faction independently enter and depart the cyber realm in an effort to become more adept at altering the Matrix's virtual reality. To suit this purpose, the rebels have assembled a makeshift Hovercraft structure, the *Nebuchadnezzar*, which they navigate through the sewers of the monolithic computer network.

"Inside the *Nebuchadnezzar*, the rebels have special chairs that hold their bodies in suspended animation as they feed their minds into the Matrix," Pope details. "The ship set was an incredible construction. It had a solid-steel center section that held up each rebel's chair, which was hydraulically articulated. The chairs were surrounded with monitors and various mechanisms, and the floor was a sort of porous grating. We shot hard and soft light up from below through the grating, although we never let that light hit the actors. They were always lit fairly softly with Kino Flo tubes that were either built-in above each chair, or set on stands. We also integrated a few MR-16s and Par cans into the design. Overall, the ship was kept pretty dark and slimy, and we had surfaces wetted down to get gleaming highlights on the structure."

Adds Garside, "Because of the nature of that set, we really couldn't use an overhead sail for ambience. The set was designed to come apart: the roof lifted up to the grid and the sides pulled out to the wall, leaving just the center section and chairs. Because of that, key grip Ray Brown and I had to build our rigs into the set, so that if the set moved, the lights were attached and it wouldn't alter the feel. There were gaps in the sides of the ship, but we didn't want to see what was outside. We therefore skimmed 2K Juniors with ¼ CTB down the sides of the set to bring the relief out and create some depth."

Lobby Showdown

When Morpheus is captured by three Agents and held within a government office building, "Neo goes back into the Matrix, basically on a suicide mission, to save him," Pope explains. "No one has ever survived a battle with even *one* Agent, but Neo is going in to attack all of the government troops, the army and *three* Agents!"

Entering the building's lobby, Neo and his partner, Trinity (Carrie-

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Anne Moss), are confronted with a dizzying onslaught of bullets and mayhem from the heavily armed troops. "Neo and Trinity come racing down the length of the lobby, shooting up everybody," notes Pope with a chuckle. "The stone columns in the lobby literally disintegrate, with huge chunks of stone spraying everywhere. For a lot of our high-speed work, we carried Clairmont's Wilcam-12, and a lot of the gunplay was filmed at 300 fps, which required Reg and I to light the set to about a T11 [while shooting with 79, at a base exposure of around a T2.8/4]."

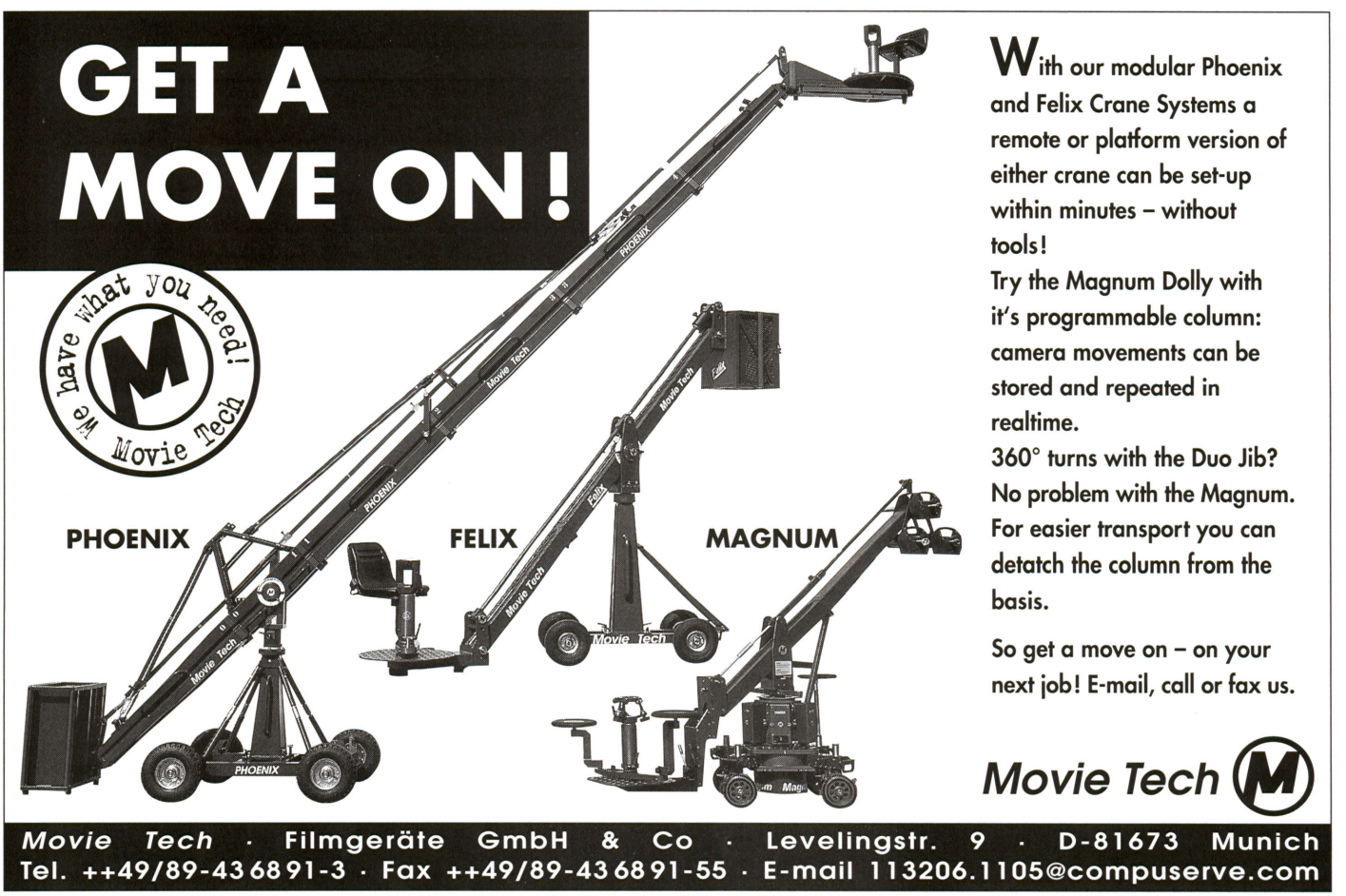
"Because the Wachowskis were using wide lenses — such as 10mm and 14.5mm — we really couldn't light the set from the floor," Garside recalls. "We basically had to light it all from the ceiling with a big ambience, so again we had nearly 1,000 Par cans in the roof."

"The walls of the lobby were a very dark green," Pope adds. "A lot of the action took place in two side colonnades where the overhead light wouldn't reach, so I used some Dinos and Mini-Dinos on the floor for modeling in those areas. There were always at least eight or nine Dinos burning at one time through 12' by 12' and 8' by 8' gridcloths. I tried to play all of the light from one side, and we used very little fill light. However, if your main light source is soft enough, you really only need one source."

Aerial Assault

After Neo and Trinity wreak havoc on the lobby, the duo takes an elevator up to the roof, where they commandeer a helicopter. "In the helicopter, Neo and Trinity descend down the side of the building and see Morpheus being tortured inside one of the offices," Pope details. "Since they've just blown up the entire lobby, the building's sprinkler systems have come on, and water starts filling up the rooms. We had a full-scale helicopter, which was flown by a rig attached to the stage perms; it could be lifted, lowered down and floated around. When the three Agents look up, they see the helicopter hovering in front of an enormous TransLight. Composed of several slightly altered shots of Sydney — with its sky corrected to white — the custom-made TransLight measured 190' by 40'. Again, we had to be able to shoot at 300 fps, so the set *and* TransLight had to be lit to a T11 when needed. Reg had a computer program that told us how many lights we'd need to achieve that. I think we had a grand total of 12,000 amps coming into the building."

"We had 200 5K Skypans on dimmers just for the TransLight," Garside adds. "In addition, we had 500 Par cans in the roof — again, aimed through a light gridcloth sail — to create some ambience over the



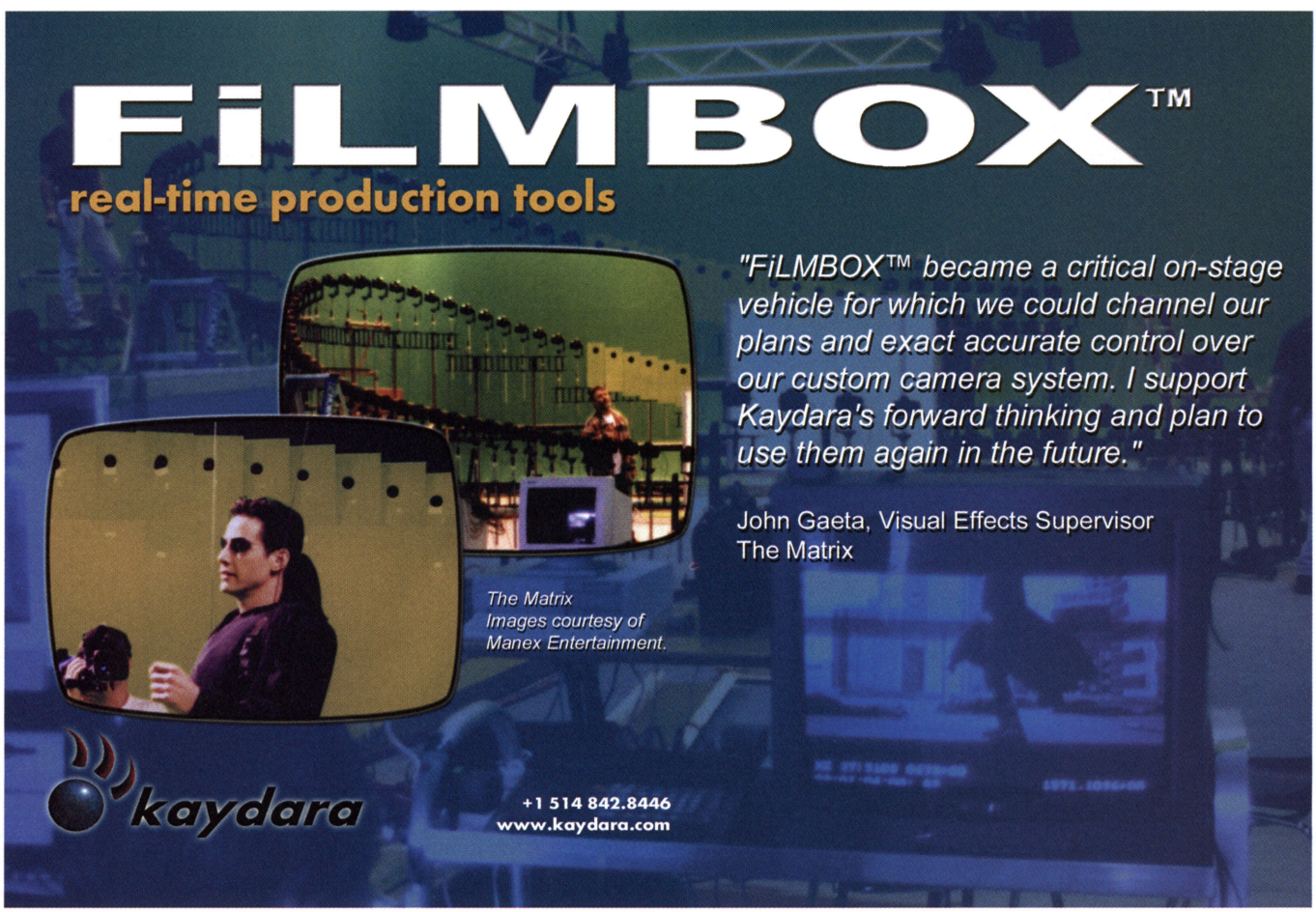
helicopter. We also had to light *into* the helicopter, so we had four Dinos coming through 12' by 12' frames of light gridcloth, which I put on scissor lifts because the helicopter was suspended 20' above the stage floor. Finally, I had five more Dinos outfitted with narrow-spot bulbs [NSP] and rigged in the perms to give us highlights through the building's windows. The windows, incidentally, were also tinted, so when they were blown out, it gave the feel of light flooding in as they shattered. We then had to light the inside of the room, which we did with several Wall-O-Lites. Since the sprinklers come on, we built our own housings for the Wall-O-Lites: Hydroflex Kino Flo tubes clipped to reflector backings to make water-safe 8-bank and 4-bank units. Then we used those units through layers of light gridcloth."

"As a last element for the lighting in this scene," expands Pope, "I wanted to create the effect of sunlight strobing over the actors' heads due to the helicopter's twirling rotor blades, even though the blades would be added to the scene later with CG. To do that, I had two 70K Lightning Strikes units which were run through a precision fader to allow us to control the amount of strobe flashing in relation to the camera's specific frame rate. We aimed those at the actors from above. We first tried Unilux units, but the Lightning Strikes fixtures were much brighter.

"Because Neo blasts out the building's windows with a mini-gun aboard the helicopter," Pope explains, "the effects people [Brian Cox and Steve Courtley] had to create a pattern of bullet-hit effects, but they couldn't squib the glass because we'd have been able to see the wires. In front of and above the glass, they rigged hundreds of mortars that projected sand hard enough to shatter the window in a predetermined pattern. The walls in the room, as well as the people, were also squibbed in that same pattern. The water then had to come pouring out of the broken windows — all in one shot.

"We were shooting over Keanu's shoulder from inside the helicopter," Pope continues, "so we saw all of this happening in front of us as he fired the mini-gun. It was incredibly complicated stuff. In fact, we had to stage it twice, because on the first take, we could see the sand pass through the air before it hit the glass. To hide it, we flagged off some of the lights overhead — which was tricky, because we still needed to light up the front of the building as if it was daytime."

With the building's windows shot out, Morpheus makes a dramatic leap to the helicopter and freedom; he's barely caught by Neo, who dives from the helicopter after his falling friend. Suspended by a cable from the now-crippled chopper, Neo and Morpheus careen



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Neo and Trinity (Reeves and Carrie-Anne Moss) share a moment in the film's subway set. Modeling on the actors' faces was often achieved with several Kino Flo sources. "Bill Pope is a big fan of Kino Flos," says gaffer Reg Garside. "The source light was almost always soft — usually a 'cascade' of two Wall-O-Lites through an 8' by 8' frame of light gridcloth — and generated from one side. There's quite a lot of shadow in the film, and Bill often wouldn't have any light at all on the fill side of the actors' faces."

through the downtown buildings while Trinity looks for a rooftop to set the heroes down safely. "Most of this work was performed by the second unit from the ground, and the helicopter unit from an additional camera-helicopter," notes Pope. "For some key shots, Carrie-Anne actually learned to pilot the 'copter. For the shot in which Neo and Morpheus are dropped onto a rooftop, a large stunt crane was constructed on the highest part of a multilevel rooftop, about 20 stories above the street. We used the crane to swing the stuntmen onto the lower levels of the roof."

Once Neo and Morpheus are safely grounded, the helicopter loses control and dives into the side of the building. "When the helicopter crashes," reveals Larry, "we see it exploding behind them in an almost supersonic wave that blasts out the building's windows — it's like a time-lapse shot of a flower opening."

"The helicopter crash was the type of elaborate sequence where storyboards are invaluable," explains Pope. "No shot in the sequence is a simple shot of reality. Many background motion picture and still plates had to be shot, from helicopters, window-washing units, and other buildings. A quarter-scale chroma-key green building was then erected — which was made of squibbed glass — that the effects people shattered in the 'expanding ring' pattern as the helicopter mockup was swung into the building on a specially-built crane arm."

Subterranean Brawl

"After Morpheus is freed, the trio is pursued down into a subway by the Agents," Pope explains. "Everybody manages to get out, however, except Neo. This is where Neo and the main villain, Agent Smith [Hugo Weaving], have their big showdown fight."

Like the previous sets, the subway had to be lit for both normal and high-speed photography. "Inside the station, the platform area had 8-square-foot ceiling sections, each of which had a fluorescent fixture built into them," Garside notes. "Above each of these sections were 72 Par cans. The built-in fixtures were actually hollow, and we just aimed the Par cans down through them, angling them in such a way that the illumination felt like fluorescent light. When we were shooting at normal speeds, we had maybe 12 Par cans coming though each fake fixture, which were covered with 1000H. For high-speed work, we rigged the set so that each of the ceiling sections could be lifted out and replaced with 8' by 8' frames of light gridcloth; increasing the light value but not changing the quality of the light that much."

"Because our sets were alternately lit to a T2.8 or a T11," says Pope, "all of the practicals had to be built so that they could accommodate both lighting levels. Many had to be specially made out of a heat-resistant resin. The [normal and slow-motion] shots don't match perfectly all the time, but it's close enough that the average viewer won't notice any difference. When you work for a long time at T2.8 and then suddenly shoot at T11, it's easy to make a mistake. At that level of light, you have to trust your meter more than your eye."

A Brighter Tomorrow

Interestingly, 150 show prints of *The Matrix* were treated to Technicolor's renewed dye-transfer "matricies" process. (See "Soup du Jour" *AC* Nov '98.) The remaining 4,350 release prints were struck on Kodak's new Vision stock.

Pope has nothing but praise for his Australian crew: "Reggie and his crew and key grip Ray Brown and all of his team worked incredibly hard on this film. They were solid as rocks and rose to any challenge. When I first laid out all of the lighting and physical requirements for this film, they said, 'You're kidding!' But when they realized I wasn't, they said, 'Well okay, let's do it!'"

The Wachowskis are equally enthusiastic about their director of photography, stating, "Bill Pope is the kind of cinematographer who really enjoys using black on the screen. There's a certain [compositional] power in having deep, dark blacks. But beyond that, Bill also likes moving the camera, which we enjoy doing very much. Those two elements fit really well into the way we wanted to make our movie." ■

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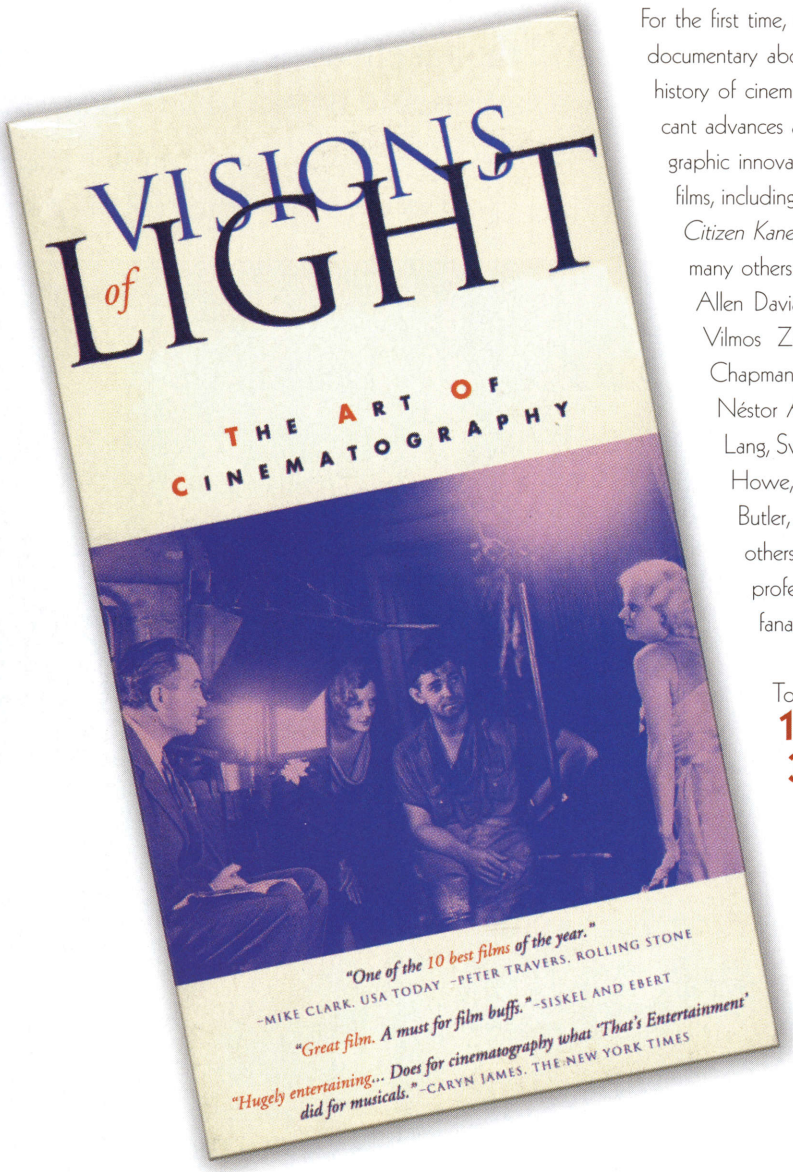

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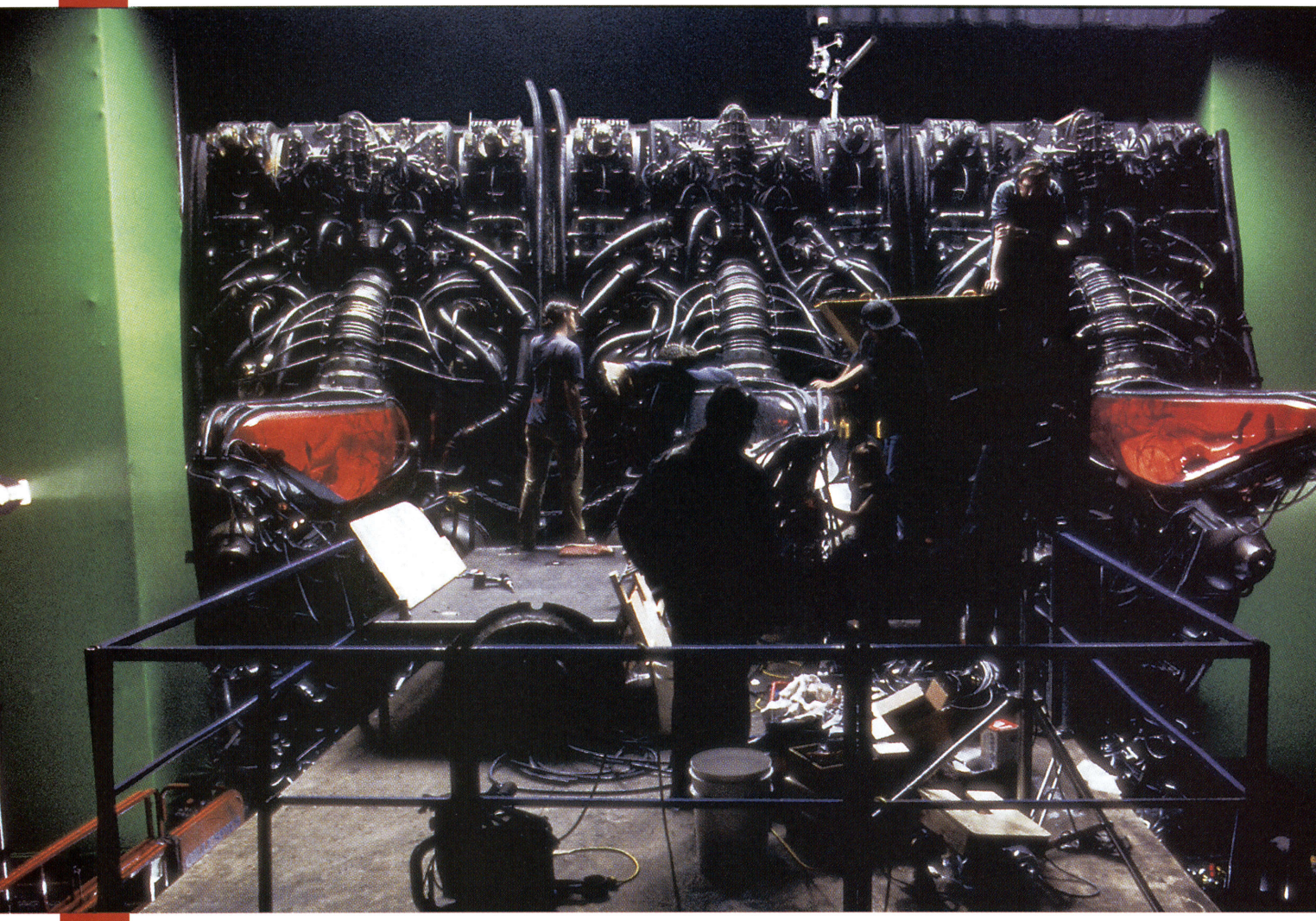
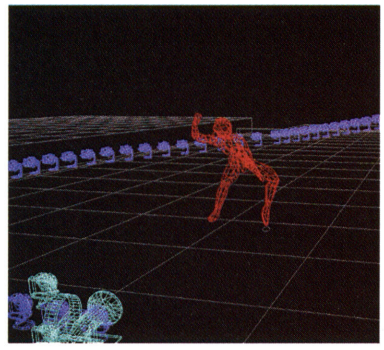


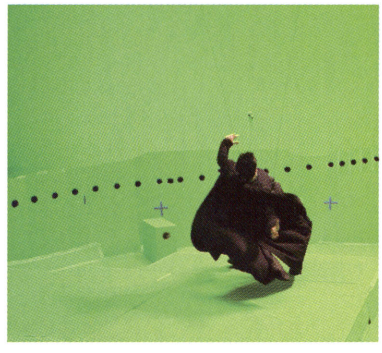
In the bizarre world of Andy and Larry Wachowski's sci-fi brain-teaser *The Matrix*, our everyday reality consists entirely of fabricated virtual-reality environments. Within this 22nd-century "Matrix," evil Agents confront a rebel band of freedom fighters led by Neo (Keanu Reeves), resulting in insanely choreographed combat scenes. Meanwhile, what is truly "real" is a realm populated by all manner of biomechanical creatures that control mankind's existence.

Creating this surreal world demanded superhuman efforts from visual effects supervisor John Gaeta, who enlisted three effects houses — San Francisco-based Manex Visual Effects (Gaeta's home base) and Sydney, Australia's Dfilm Services and Animal Logic — to get the immense job done on time and on budget. (Manex, formerly known as Mass.Illusions, recently contributed its talents to the epic fantasy *What Dreams may Come*, creating the impressionistic "Painted World" — see *AC* Nov. 1998.) Gaeta and his 100-person crew spent the better part of two years prepping for and then delivering nearly 500 effects-filled shots.

The unique stylistic approach and visual effects needs of *The Matrix* stem from the Wachowski brothers' joint obsession with *manga*-style graphic novels and cartoons. "They're authentic comic-book freaks," Gaeta observes, "and that's where many of their cinematic ideas come from — Japanimation and deviant comics artists. I'll tell you what's even more flipped out: in the film, the Matrix virtual world is like the one we live in today, while the 'real world' is ultimate science-fiction stuff, filled with all of these biomechanical robotic creatures. It's a crazy environment; the film is absolutely filled to the gills with digital environments and creatures."

One of the film's nightmarish





beasts is the Doc Bot, a massive, extremely sophisticated, multilayered robot presiding over the nursery of mankind: a vast fetus field containing containing millions of embryonic test-tube humans waiting to be harvested. The Doc Bot was created entirely within Manex's computers; Gaeta describes it as "this robotic spider that's detailed to the hilt with medical equipment and big, robotic arms. What makes the Doc Bot's movements unique is that it's universal-jointed, so it can bend its limbs rotationally in very complex ways." He adds that the Doc Bot and the film's various other creatures were modeled and animated with Alias/Wavefront's Maya software, and later composited via a Cineon.

Gaeta promises that the picture's introductory pullback shot, which reveals the fetus-field habitat, will put other such powers-of-ten shots to shame: "That shot had to be the most insane undertaking since *Contact*'s opening shot. This sequence begins with the camera spiraling out of the eye of a developing fetus, and then corkscrewing up to reveal this infinite field of babies being grown. Then we see these massive Harvesters — giant, floating beasts with long, fleshy arms ending in mechanical claws, picking babies like oranges off a tree. The entire environment is 100 percent CG."

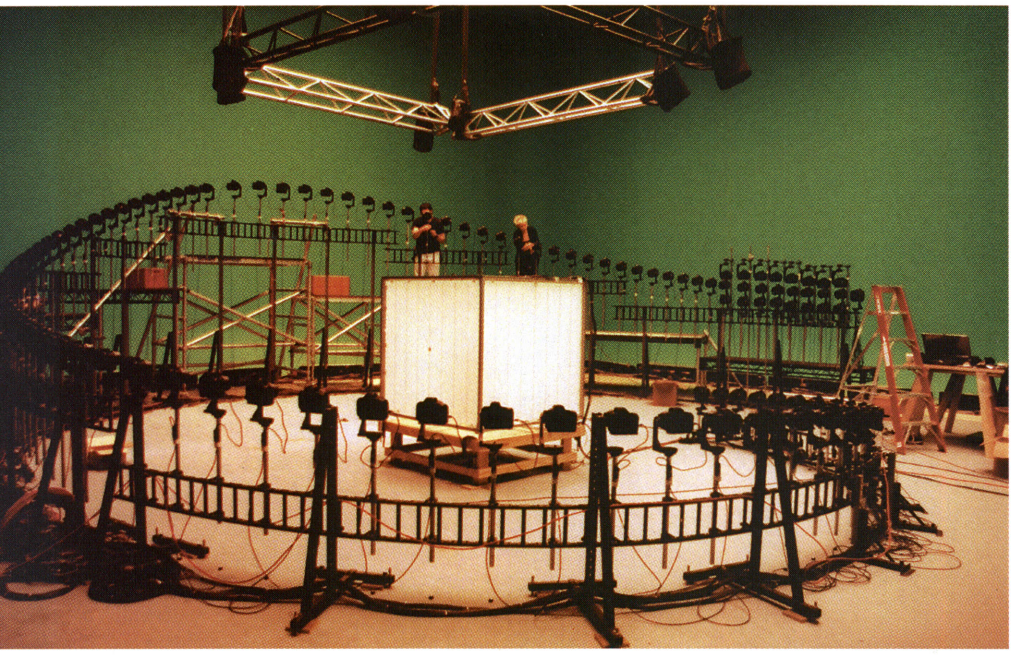
"The pullback shot is phenomenal," attests Manex's Rodney Iwashina, who also worked on the aforementioned trip-through-the-cosmos shot in *Contact*. "The imagery is so dense that as the shot slowly unfolds, it will provide the audience with a wonderous view of the state of the of the world as it exists in the 'present day' of this dark future. Jamie Pilgrim, the lead character animator, brought life to the shot, animating all of the close-up creatures. Rudy Poat, our color and lighter and shader writer, has created absolutely killer looks for every object in the shot. Steve Demers has created the best CG atmospherics to date using his RenderMan volume shader. And Grant Neisner, our lead designer, not only created the Doc Bot and many other objects, but also modeled and textured them as well."

After being harvested, the

Opposite: The pod set utilized by the first unit, which was extended to nearly limitless proportions by Manex's CG artists: This page: A sequence illustrating the "Flo-Mo" virtual-camera process. From top: (1) A previs simulation of a camera move around a human subject, breaking down each frame and assigning them to individual still cameras mounted in a semi-circular array. (2) The performer (Keanu Reeves) being photographed by the greenscreen-covered array. (3 & 4) Reeves is then composited into a virtual background created from still images with photogrammetry techniques, allowing proper perspective changes to compliment the synthetic camera move.

Photos courtesy of Warner Bros. and Manex Visual Effects.

Techno Babel



Above: Manex's Flo-Mo array could incorporate as many as 120 independently triggered Canon EOS-A2 still cameras, which were mounted on adjustable vertical rods attached to a flexible steel track. Notes visual effects supervisor John Gaeta, "Once the broad shape of the move was plotted out, we used a laser-guided tracking system to select exactly where to aim each of our still cameras so they would be shooting at the interest point, which was represented by a cube with diffusion paper on it." Right: The rig was covered in greenscreen material to facilitate compositing, with only small holes allowed for the cameras.

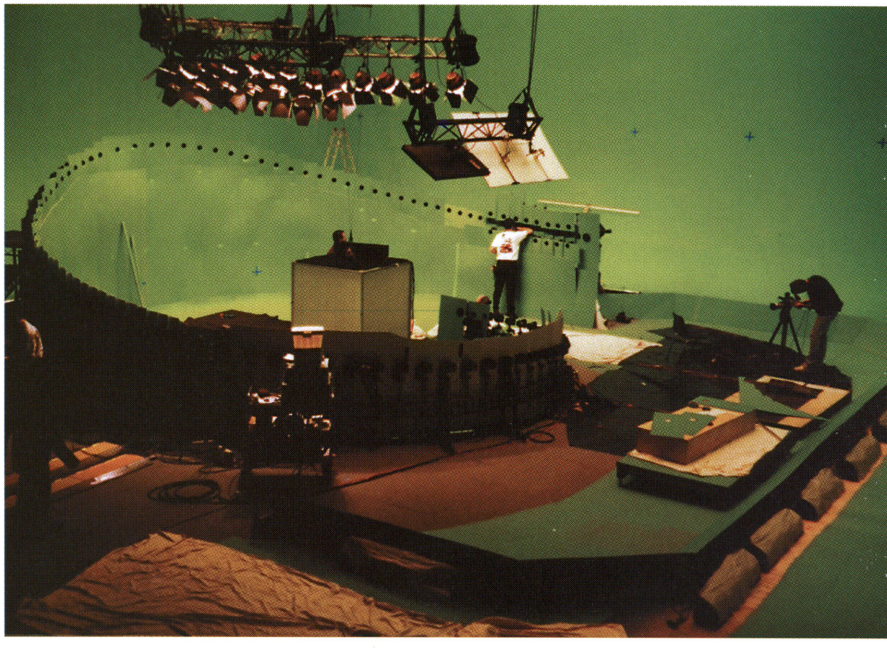
human offspring are placed in huge pod towers and plugged into a massive central computer; their thought patterns and energy will be used run the huge virtual-reality world of the Matrix. All of this is revealed to Neo by fellow rebel Morpheus (Laurence Fishburne) in a setpiece dubbed the "History Program," which was created by Manex's artists using a combination of 2-D digital matte paintings and 3-D environmental and character animation. Once Neo agrees to help Morpheus destroy the Matrix and free mankind, he undergoes a series of training simulations that teach him to fight the Agents policing the Matrix. "This second quarter of the movie reminds me of an Alfred Hitchcock film that has no end," Gaeta explains. "Our characters are constantly falling in and out of different doorways into different simulations. You have no idea which space you're really in. It's like a constant reloading of different scenes, which involved a combination of 2-D and 3-D digital tricks."

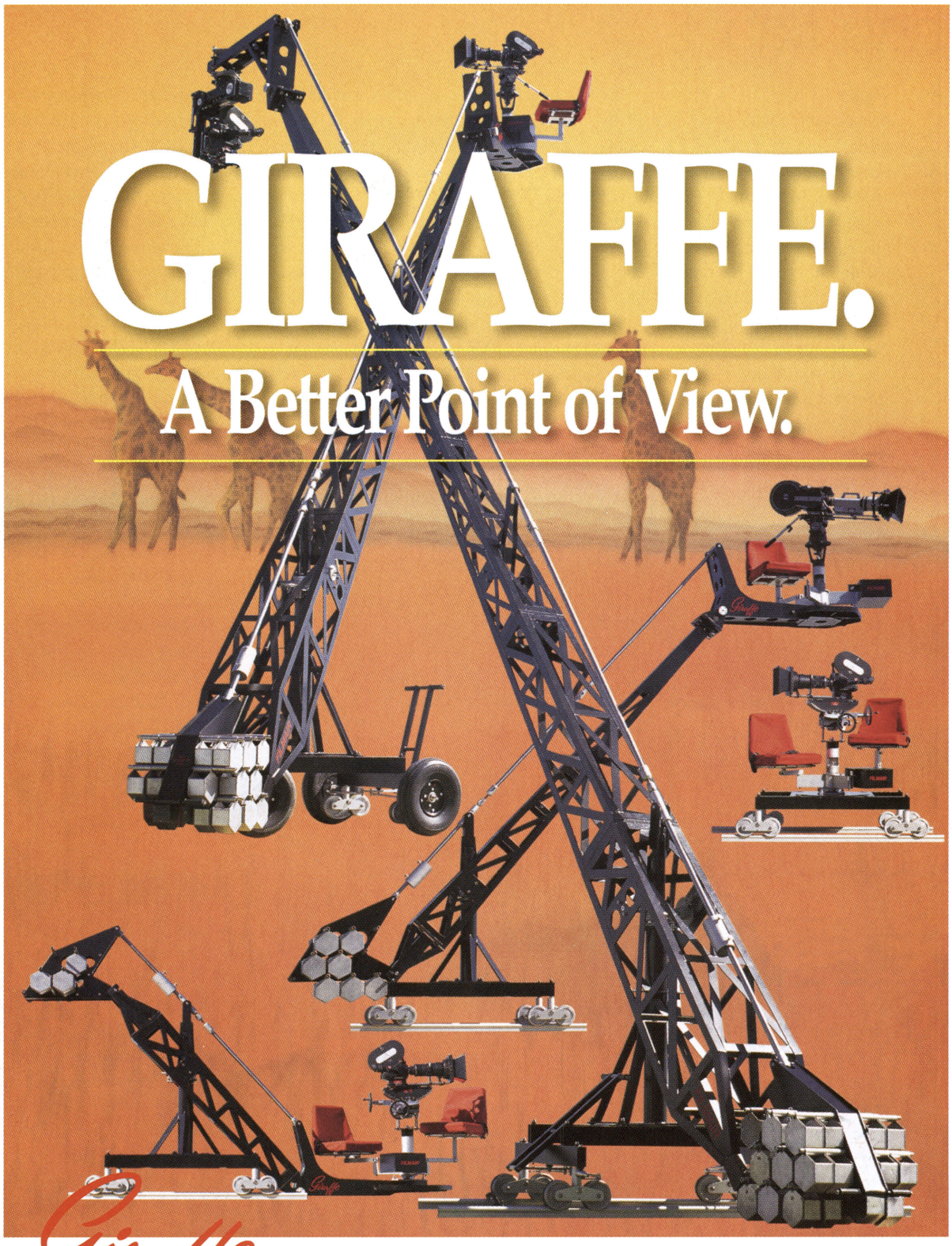
In one simulation, Neo jumps off a building in order to determine his powers. "Morpheus can simply leap from building to building, so Neo attempts to follow his path," Gaeta says. "It's a mind-over-matter situation, but Neo is inexperienced, so he falls and hits the pavement, which reacts like rubber."

Interestingly, all of the cityscape backgrounds used in this sequence were created using sophisticated view-morphing to make synthetic environments based on real photographs.

Gaeta decided to explore this novel approach after thoughts of shooting these backgrounds via motion control on full-size or miniature sets were dismissed (due to rig removal or space and location constraints). The eventual approach was founded on some of the image-based rendering techniques that Manex's George Borshukov had developed with researchers at UC Berkeley. Gaeta explains, "The methods we used were cobbled up from a lot of work done in the last few years in computer graphics. That research involved using photogrammetry techniques, including projected texture-mapping and laser measurement methods, to extract the shapes of objects from photographic images." He adds that these developments make *The Matrix* a particularly interesting project, "because the scenes that depict virtual reality were created using the techniques that I think are going to be at the core of virtual reality."

The technique, described as "Virtual Cinematography," involves building virtual sets from nothing more than a small number of still photographs, and then "filming" these landscapes inside a computer with synthetic camera moves. "The





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At left, Gaeta and co-writer/director Larry Wachowski (wearing cap) prepare Keanu Reeves for a stunt on the Flo-Mo stage. The system could be used to simulate any camera frame rate up to 600 fps, and frame-interpolation software was employed to create the synthetic in-between images needed to extend the duration of any shot.

shapes of the 3-D objects in the background plates were derived by photographing real objects," Gaeta elaborates. "We would first photograph a location from different angles, using control objects to unify all the photographs that we took. We then compared these images, using a triangulation method to sort out the spatial relationships of one object from another."

This method — using just the information in real photographic images to photogrammetrically extract 3-D computer models, and then generate novel views using the color and lighting information from the photographs — resulted in a tremendous level of realism. "This research and development took place over a period of about six months with a team that worked closely with digital-effects supervisor Rodney Iwashina," recalls Borshukov, who served as virtual-cinematography technical designer on *The Matrix*. "We had to develop an extensive set of new techniques, tools and methods that would allow this technique to meet the extremely high requirements of a motion picture, and enable totally free-moving cameras in completely photorealistic environments. We also developed postproduction tools that accounted for lens distortions, color differences, vignetting and film grain. Finally, a set of new rendering tools was created in order to integrate the virtual-cinematography techniques into our existing digital film pipeline."

Supervisor Kim Libreri explains how this pipeline worked: "First, we selected still photographs taken on location, which were shot for match-grading purposes on Kodak EXR 5245 using various prime lenses. These stills were scanned as VistaVision into 3K-line, 10-bit log Cineon files. Any lens-distortion defects were removed by our lens-calibration system, developed by our science officer, Dan Piponi. CG models were then extracted semi-automatically using data acquired during a Sokkia laser-survey of the set, and by correlating those samples to corresponding objects in the photographs. The models were textured by a set of custom Mental Ray shaders, which automatically transformed the chosen photographs into the surface geometry of the models."

Extracting the physical shapes was only the beginning, however. "Static grain artifacts had to be removed before the photographs were passed to the rendering system," Libreri continues. "To further enhance the photorealism of the virtual backgrounds, we added lens distortion and film grain. We also used Pixar's Renderman to add camera-shutter motion blur. We sometimes had to relight some of the landscapes, which was done in a separate pass that allowed us to add or remove lighting from the scene."

The use of this synthetic background technique came to the fore in a series of fight sequences pitting Neo against various Agents within the Matrix. The Wachowski brothers imagined having the opponents diving at one another in hyper-slow-motion with guns blazing, pummeling each other while unloading their clips. Meanwhile, the camera covering the action would be running at speeds between 300 fps and 600 fps, making 360-degree moves around the combatants as they spiraled through the air. In short, what the Wachowskis wanted was the impossible. "Larry and Andy told me, 'Our movie is about the complete manipulation of time and space in a simulated world. We need you to come up with a method of manipulating time so the camera can be moving while all of the high-speed stunt action is happening,'" Gaeta recalls. "They just love using hyper-slow-motion. They shot more production footage with the 300 fps Wilcam than I've ever seen done before, but everyone they had approached about doing these high-speed camera moves during the slow-motion fight scenes had literally suggested putting the camera on a rocket sled."

Gaeta's alternate idea was to use an array of still cameras to shoot the action, then sequentially animate the resulting photographs to create virtual camera moves — a method that has been extensively used in a variety of recent television commercials. (For details on this concept, see "Virtual Camera Movement: The Way of the Future?" *AC* Sept. 1996.) However, there was a key difference between Gaeta's goal and what had been done before. "This technique is usually used to 'freeze' action, capturing a moment in time," he

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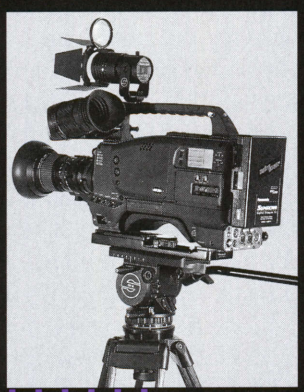

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Support & Lighting

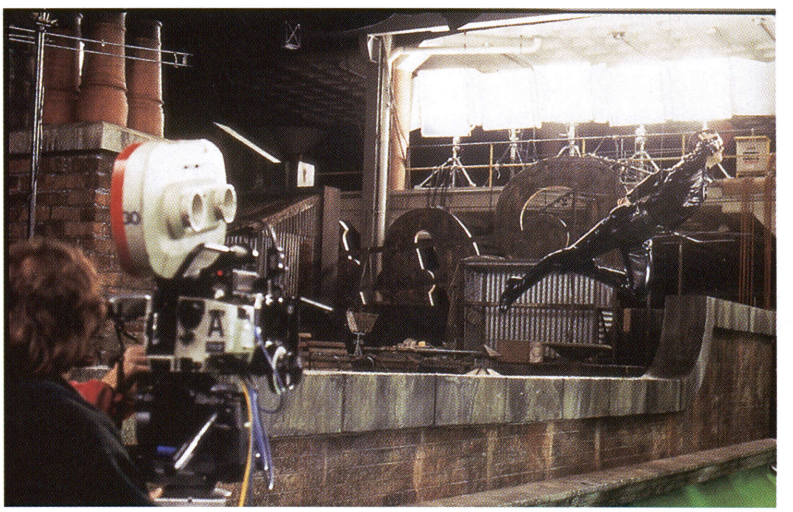
While Manex's Flo-Mo rig was used throughout five separate fight scenes, the first unit also captured action on stage. Hong Kong martial-arts master Yuen Wo Ping was brought in to coordinate these sequences, which utilized extensive wire work. Shooting at variable speeds required lighting that could be easily adjusted for shooting from 24 to 300 fps.

points out, "but we had to rapidly move the camera around action that had been greatly slowed but *not* stopped." This required a system that could plot and program these moves by controlling the firing sequence of the cameras along the array.

Gaeta began shooting tests in February of 1997, and developed an effect he dubbed "Flo-Mo," which simulates the effect of a camera moving at very high speeds while shooting at any desired frame rate up to 600 fps. (The Wachowski brothers described this state of extreme temporal tardiness as "bullet time," and utilized high-speed camera techniques of their own during the film's first-unit production.) Manex's custom-built array rig — which resembled a huge flexible watchband — utilized 120 independently triggered Canon EOS-A2 still cameras with Canon EF lenses engineered by Frank Gallago, Paul Clemente and David Nuniez at Innovation Arts. The cameras were mounted on adjustable vertical rods set along the array path, and controlled with a Kaydara motion-capture system running on a 400mhz Intergraph computer. Initial tests were shot with Kodak 5274 motion picture film, and the final images were captured using Eastman's 500T Vision 5279, which was bulk-loaded by Australia's Atlab into still cartridges.

The Flo-Mo system could break down and program virtually any camera move the Wachowskis could imagine — including 360-degree tracking shots and swooping crane shots — into specific increments that could then be assigned to the individual Canon units along the array. "For example, we could shape the array into an elliptical path around our subject," Gaeta says, "and then use the adjustable vertical rods to place the still cameras up and down along this path, which allowed us complete flexibility to position the cameras any way we wanted."

The entire front of the Flo-Mo unit, including the cameras themselves (with the exception of a small hole for each lens), was covered with greenscreen material to allow Manex's CG artists to successfully matte out the rig. The subjects would then be composited into virtual landscapes created using the aforementioned photogrammetry technique, which allowed for proper background-perspective changes. "Audiences aren't accustomed to seeing changing perspectives in hyper-slow-motion sequences," Gaeta adds, "which sets these sequences apart from anything that had been done before. We would also shoot the scenes with a 1/500- or 1/1000-



per-second shutter speeds, which completely eliminates all motion blur and creates this false stereoscopic feeling."

However, while the use of this array system for *The Matrix* required the support of cutting-edge computer technology, the Flo-Mo concept practically predates motion pictures altogether, harkening back to Edward Muybridge's famous still-frame motion studies. "The thinking is literally that old," Gaeta agrees, "but it's only just recently that we could fathom how to plot out the positions of still cameras in such a way that we can capture a dynamic camera move from point A to point B and create moving shots of events that are simulated to be at a much higher frame rate."

Transforming the film's dynamic, hyper-slow-motion ballets of violence into a series of still images required substantial previsualization work involving the actors, Gaeta, Libreri, Borshukov and Flo-Mo previsualization animator Dan Klem, as well as the stunt coordinator, Hong Kong martial-arts master Yuen Wo Ping. "We first worked with Wo Ping and videotaped the rehearsals of his wire-rigged stunts from all angles," Gaeta describes. "That gave us a real-world document of the speed and trajectory of the actors' bodies, which we could use to track the action in 3-D. The Wachowskis then directed a dynamic 3-D camera move around our 3-D body-track of the stunt, and we would select what frame rate at which we thought the stunt would look best. We'd ask the brothers, 'Do you want to freeze a third of a second or two seconds of real-world time?' That decision would depend on the aggression of the stunt, how wildly the actors were moving and how much the Wachowskis wanted to show. If the stunt looked awesome at 500 fps, I knew we could simulate a 360-degree move if we used 120 cameras and they all triggered within a third of a second. When we later animated and

projected that sequence at 24 fps, it would appear as if we'd captured a third of a second of a moment in time. We were working in tenths of seconds because we were trying to precisely catch the ideal start-and-stop points for the action."

"Previsualization was instrumental in the success of the Flo-Mo shots," Rodney Inwashina adds. "Our SoftImage previs for each shot incorporated 3-D body track and virtual set data. Once the CG camera move was choreographed, the camera position and orientation for each still camera position was exported to the motion-control laser-positioning system. The camera trigger timing information was also exported to drive the Kaydara software for the shoot, and later in post to drive the frame interpolation. Dan Klem, our Flo-Mo previs artist, was invaluable with his practical knowledge of models, motion control, cameras and lenses. Also, the crew at Innovation Arts was great. They were always coming up with ideas on how to improve the design and make the rig more accurate and reliable."

Precision was the key to transforming these still photos into dynamically moving fight sequences. Gaeta and his team used a custom laser-guided tracking system to ensure that each of the up to 120 still cameras would be aimed at the right "interest point" in the action sequence in order to capture the actors' high-velocity movements. (The interest point is the position of the array's virtual camera at any given frame during the move.) "Much of what's been done to date with the array technique has involved 'freezing' objects in the middle of a circle, where it's much easier to physically line the cameras up to capture the action since it's fixed on one little place," Gaeta observes. "We upped the ante even further by capturing stunts that wavered all over the place. When the actors jumped across the room, we

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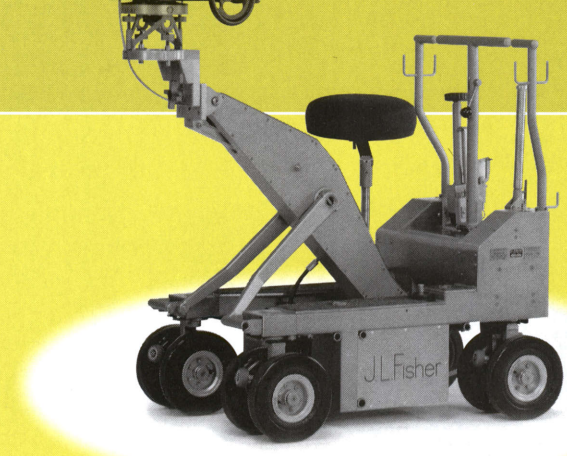

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wanted to do a really dynamic crane shot that boomed up over their heads and tracked the guys through the entire stunt. Fortunately, we'd learned how to accurately do this kind of tracking while working on *Eraser* and *Judge Dredd*, which factored heavily in our ability to design and implement 3-D moves for *The Matrix*.

"Basically," Gaeta continues, "once the broad shape of the camera move was plotted out, we used a laser-guided tracking system to select exactly where to aim each of our still cameras so they would be shooting at the interest point, which was represented by a cube with diffusion paper on it. We put this cube in the middle of the camera array, and inside the cube was this little motion-control pan/tilt/roll head that was guided by an export move derived from the Flo-Mo previs, which aimed a laser at a specific place on the cube. The laser generated a dot on the cube for each still camera, and we aligned each camera with the corresponding dot, so we could accurately aim each camera for every frame of the shot. Then we animated the cube in 3-D, so we knew where all of the cameras' interest points were bisecting the cube in the computer, and used that as a reference to replicate that motion-control move in our CG background plate."

The Matrix features five separate action sequences featuring footage generated with Manex's still-camera array, each of which took approximately three days to set up and shoot. Despite the extensive previsualization of each Flo-Mo shot and the creation of CG background plates, Manex's job was just beginning once all of the 100-plus still cameras had fired. "Although the Flo-Mo rig could use anywhere between 50 and 120 cameras, that might add up to just five seconds of screen time, when we might need 20 seconds. The other side of this story

is that we made this groundbreaking effort to advance the technique of interpolating images," Gaeta says.

Only by creating synthetic frames, based on the two original existing images on either side, could Manex extend each Flo-Mo sequence to the respective running times that the Wachowskis required. Also, interpolation was necessary to create the speed changes audiences expect to see in large, smooth ramp-ups, which was absolutely mandatory in making these sequences move like believable crane or dolly shots. "At 500 fps, the first foot of motion could involve many, many, frames to make a smooth ramp-up," Gaeta stresses. "It was a substantial amount of work to create that many discrete, totally synthetic, in-between frames."

Needless to say, doing accurate frame analysis using images taken by cameras firing at 1/1000 of a second was not easy. Gaeta explains, "If I move my hand and describe an arc in the air, I might only capture the beginning and the end of the movement. Initially, the computer is going to want to draw a hand directly between these two linear points, totally eliminating the arc. We therefore used all of these techniques in nonlinear interpolation, some 3-D and other techniques, to basically designate a destination for interpolation so we could describe to the computer where it should be going."

Thanks to Dfilm Services, Animal Logic and the pioneering efforts of Manex Visual Effects, *The Matrix* will expose audiences to the dark side of virtual reality — and perhaps set a new benchmark for visual effects in the process. "It's unreal," Gaeta says of this progress. "We break different ground with every job — camera control, virtual control, synthetic photography. Each film is an exponential leap forward." ■

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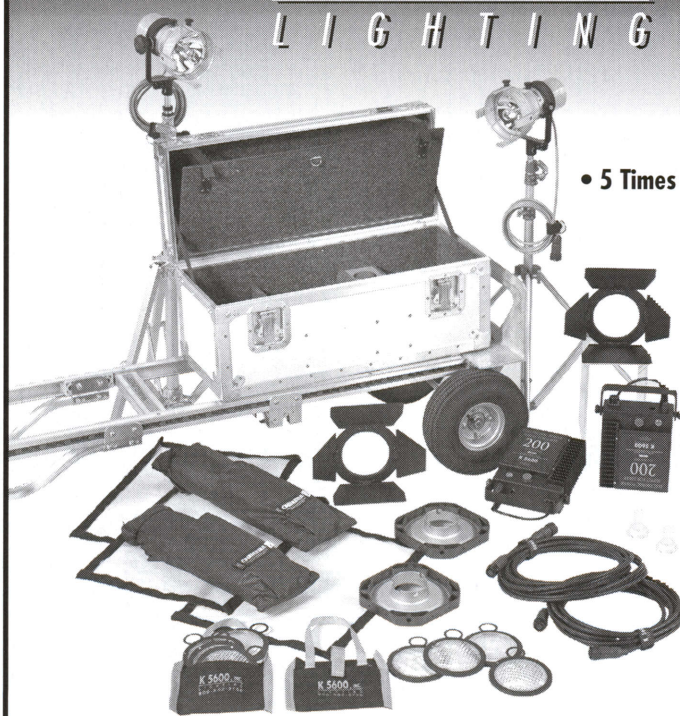

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A High-Concept Drama in High-Def

With the help of Plus 8 Video, director of photography James Bagdonas, ASC performs an HDTV transplant for *Chicago Hope.*

by Michael Hirsh

Photography by Spike Nannarello

The script for an intriguing fall 1998 episode of the CBS medical drama *Chicago Hope,* titled "The Other Cheek," called for most of the show to be shot documentary-style, as though a *20/20* or *Dateline* program was covering the controversial death of a beloved TV star in the fictional hospital's ER. Slated to direct the episode, *Chicago Hope* executive producer Bill D'Elia recalls saying to himself, "Well, I *guess* we're supposed to shoot this show on tape." His aesthetic decision and later choice to utilize high-definition video for the production of the episode marked an interesting departure for the series, which is traditionally shot on 35mm film — currently with Kodak's EXR 5298 and 5293. (Incidentally, the episode's title is *not* a Biblical reference, but a wry pun in honor of the episode's ailing protagonist, an actor who dies after one of his butt implants ruptures.)

Three months later, on Wednesday, November 19, just moments before "The Other Cheek" would air, D'Elia stood on the stage in Studio 36 at CBS Television City in Los Angeles. Addressing 200 invited

guests who were about to watch the East Coast feed of the show on a giant Sony high-definition projection screen, he remarked with candor, "I have a feeling more people are seeing it here [in HD] than anyplace in the country."

D'Elia had begun to sense that he was involved in something special a month earlier, as he wrapped the week-long HD shoot for the episode. "Everyone I ran into in the business kept asking, 'What's the difference [between shooting HD and film]?' 'What do you notice about it?' All I noticed was that it was flawless. The episode in question was relatively easy as far as productions go, and it was a lot of fun. Quite often, as a director, you don't have much fun."

Though D'Elia hadn't initially recognized the importance of *Chicago Hope* being the first network TV dramatic series to utilize the HD format during production, the show's director of photography, James Bagdonas, ASC, realized early on that the series was embarking on a history-making adventure. "No one had done a dramatic piece like this in HD before," maintains the cameraman, who has garnered both Emmy and ASC Award nominations for his efforts on the weekly drama (see *AC* Oct. 1998). "I looked at the situation as a great opportunity to play with high-def, because I knew it would be a win-win situation for everyone." Bagdonas is currently shooting his third season of the series, following a run on *Lois and Clark: The New Adventures of Superman.*

Chicago Hope's HD experience began when Sony asked Burbank-based Plus 8 Video to bring a Sony HDW-700 HD camcorder to the show's soundstage, located on the 20th Century Fox lot in Century City, so a test could be conducted. Plus 8 VP Chris Nightingale and cinematographer Andy Sobkovich arrived shortly after the *Chicago Hope* crew had finished a dolly shot down a hospital corridor. After the duo quickly briefed the show's regular crew on the use of the Sony camera, the corridor shot was repeated, this time with the HDW-700 propped on the operator's shoulder, ENG-style.

The next morning, *Chicago Hope* executive producers Jim Hart and D'Elia, producer Rob Corn, and supervising producer John Heath met with representatives from Sony and Plus 8 Video at Laser Pacific's editing facility in Burbank. The 35mm version of the corridor shot was screened in NTSC, followed by the HD version, and then the HD version down-converted to NTSC. Next, the group went into Laser Pacific's HD color-correction suite to check out the possibilities and limitations of the process. Satisfied that the HD format would meet their needs, the series executives gave the final go-ahead to shoot the "The Other Cheek" in high-definition television.

Shortly before the episode went into production, another meeting was held on the Fox lot to work out the details of the shoot. It was decided that Plus 8 would configure the package so that in addition to feeding the Sony HDM-14E5U 14" HD monitor on the set, they'd also take an NTSC 525-line down-converted signal out of the HDC-750's camera-control unit and send it to a standard monitor mounted on a cart above the HD screen. The 16:9 image on the NTSC monitor was letterboxed, with graticules overlaid on the screen so D'Elia and Bagdonas could ascertain the 1.33:1 broadcast-safe area. (Later, Bagdonas had the sides, top and bottom of the both the NTSC monitor and camera viewfinder taped off so only the 1.33:1 image was visible.)

As the first setup began, Bagdonas was still feeling out the nuances between his film-production experience and the requirements of shooting on HD video. "Film has a broader palette than video, with a wider spectrum of color and contrast," Bagdonas points out, "so you're not as limited in creating a look as you are with video. With 20 years of film lighting experience, it's an odd transition to be asked for more light in shadows or to crush down the highlights because the video camera loses the detail."

Plus 8 Video engineer David A. Canning also felt a bit odd about the shoot at first. On first day of stage work on "The Other Cheek," he and fellow technician Andrew Sabol felt a bit like distant relatives who had been invited to a wedding even though no one really wanted them there. They were alien creatures: video guys on a film set. But the entire crew realized

Photos courtesy of Plus 8 Video.

From left: *Chicago Hope* series regular Eric Stoltz works out a scene with guest star Scott Reeves as operator Chad Persons and camera assistant Chris Murphy cover the action with a Sony HDC-750 high-def camera.

A High-Concept Drama in High-Def

Selected to give this episode of *Chicago Hope* a distinctly different look, high-definition video also provided the series' regular crew with several challenges in terms of lighting and art direction.

that for the eight-day shoot to be successful, the two camps would have to be able to communicate with each other. They would simply have to learn each other's language.

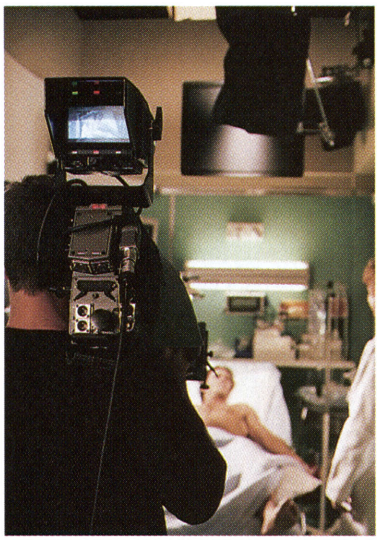
What Canning impressed upon Bagdonas was that his lighting skills were essential to successfully working with HD video, but that there was no need to guess about the outcome. Shooting with video did necessitate some changes in production procedure, however. Canning explains, "In film, they block, light and shoot. With video, we block and light, but then let the video shader look at the image and make the necessary adjustments. Think of it like this: we're doing exposure, color correction and workprinting in real time. It doesn't happen later at a lab."

Most importantly, Canning recounts, "We wanted to make sure that the *Chicago Hope* crew had a very good experience with the camera, had no down time, and shot no slower than they would normally. But we needed to know what they were going for, and then have the time to achieve it the video way."

For example, the HDC-750 can be set to create a shallow depth of field by running at -3dB gain and, if necessary, adding a neutral-density filter. This allows the iris to be opened wider and brings the user closer to the kind of focus control that's found in the film realm. Of course, this type of solution is not what film people are accustomed to doing, and the results are not quite the same as with film cameras. "We're used to using long lenses to give us a shallow depth of field," says Bagdonas. "We opened up the stop a bit, but even then we couldn't truly get the separation that our 35mm film camera lenses give us."

So what did they do when the director wanted to rack focus? "We were still able to do it, but it wasn't what we were used to," Bagdonas says. "We had to keep the frame size the same, so we needed to go longer on the lens, and sometimes you just don't have the room to back up and do that." This may be a set-design lesson for the future.

Another example of how film and video solutions differ arose during the shooting of close-ups of female performers. After seeing the regular camera crew automatically drop in a diffusion filter for these shots, Canning broached the video solution: use the "detail" or "enhancement" adjustment to add or subtract sharpness in the picture, thereby eliminating the need for lens filtration. The HD-750 camcorder also has a feature called "skin detail,"



which allows for the automatic removal of detail information just in the skin areas of the picture.

What needs to be overcome, Canning believes, is the tendency to use the video camera exactly like a film camera. "You can't do it," he emphasizes. "In film, you're looking for exposure and focus, and you use different film stocks for different light levels and expose within the correct range. Video has a fixed dynamic range. Film people like things dark; they want to expose at only 30 percent of video level. But if you're only making 30 units of video for your brightest scene, then flesh tones are down at 15 percent, and you've wasted the full dynamic range of the camera. If you get into post and decide you want it brighter, they can do it, but you're going to pull up the noise level."

Looking at the HD and NTSC monitors on the set — situated about 25' from the camera — the producers and cinematographer thought the high-def image was crisp and detailed. Bagdonas remarks, "It was jarring, as if we were watching the scenes through a window. However, because of the level of detail that was being recorded, we were concerned because our sets were designed for film." To elaborate, the cameraman explains that while film translates textures and colors to render a particular cinematic tone, video records them differently and the resulting images take on a "live and happening" feel. Because of this, the sets took on a different character.

It didn't take long for Bagdonas and the *Chicago Hope* crew to recognize this perceptual difference and figure out which procedural adjustments they needed to make. "We lit things as we would for film," says the cinematographer, "while still being aware that the [lighting and] contrast ratios were a bit lower. Working on film, if I had light coming through a window, a hot background, or hotter highlights, I'd let them be three or four stops hot. With video, I wouldn't let them go more than two stops to get the same result, to avoid blooming or bleeding out the whites."

The cinematographer adds that he quickly realized that he also had to be very careful about detail in shadow areas: "With film, you know that shadow detail will fall off and blend in. In HD, you can see it all. Because of the low lighting ratio, we had to work harder to retain the blacks in the shadows."

In addition, to help retain the feel that this episode was a "live" event, Bagdonas strove to "keep imperfections in the lighting, which meant sometimes leaving practicals

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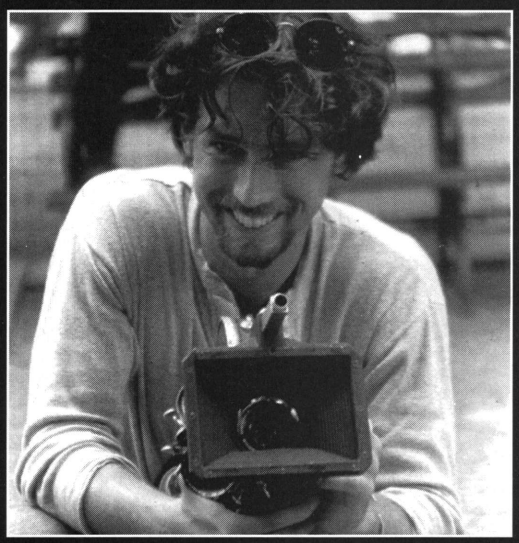

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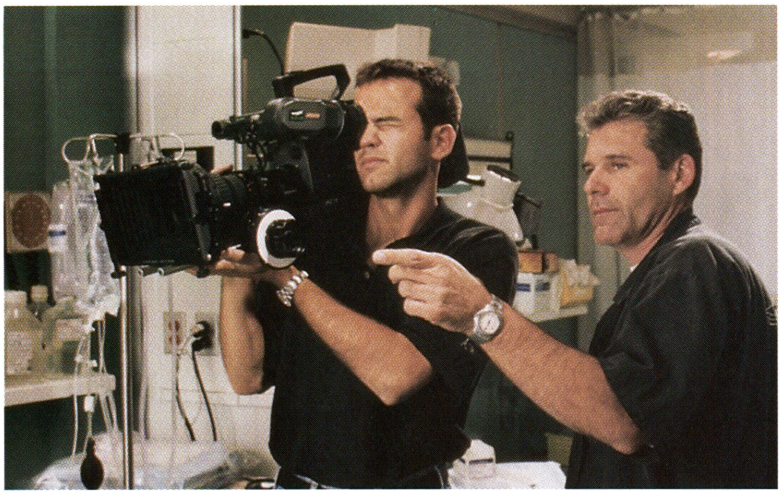

Top: Director of photography James Bagdonas, ASC, sets up a shot with operator Chad Parsons. In adjusting to the unique requirements of high-def work, the cameraman drew upon his 20 years of lighting experience. Bottom: Murphy slates the next take for Persons. A feed from the HDC-750 ran to both an HD monitor and a standard NTSC monitor so Bagdonas and director Bill D'Elia could simultaneously compare what the camera was getting and what viewers at home would eventually see when the episode was broadcast.

unbalanced." This included gelling practical fluorescents so they went green and adding other lighting imperfections that would have been glaringly wrong for the usual tone of the series, but correct for the context of this particular episode.

D'Elia says that he initially found the experience of directing the show to be virtually the same as his previous experiences using film. However, while looking at the high-def monitor a few days into shooting, he noticed a problem. "We have two distinctly different kinds of sets on our show, which include an office wing, the ER and the operating theater. The operating rooms are rather subdued and the offices are monochromatic, but the ER has some color and other different elements — it's a bit sloppier.

"During the first couple of days, when we were in the monochromatic offices, I didn't notice a difference. It was the same as shooting film. The day that we went into the ER I had the hardest time because — to me — it didn't look good on the high-def monitor. I couldn't intellectualize why. It just was wrong.

"What I later realized was that because the colors on the set looked so accurate in HD, I could tell for the first time that I was on a set. I've directed dozens of *Chicago Hope* episodes, and I've never had a problem believing we were in a real hospital; this was the first time I had that problem. Once I realized what was happening, we knew that we needed to cut some light here or use a longer lens there, and that we couldn't go too wide on this shot or that. Other people shooting HD for broadcast will find that they're going to have to be more certain that their sets look really good, because otherwise you'll be able to tell that they're sets.

D'Elia's observation about color rendition from the HD cameras is on target. The HD camera provides virtually the same color-imagery response as the human eye. Unlike NTSC video, HD reproduces the shades between the primary colors very accurately. However, the director and cinematographer are able to discover any potential problem during the shoot, not the next day when the film comes back from the lab. That was a big plus for Bagdonas, who maintains that "the episode was basically a cakewalk, because we could walk over to the monitor and see what we'd just lit."

In order to give D'Elia the images he wanted, the crew sometimes found themselves more concerned with keeping light off the monitor than off certain parts of the set. Canning points out that the ambient lighting environment is very critical for judging a high-def picture. It's so critical, in fact, that Sony has provided an easy way to ensure that the light level is correct. "There's a light gray 'HDVS' symbol on the upper right corner of the metal frame surrounding the tube," Canning notes, "and if you can read it, there's too much ambient light falling on the monitor. In order to get a true picture, the light needs to be turned down to the point where the symbol disappears."

Then there's the matter of shooting in 16:9 instead of the standard 1.33:1 TV format. Bagdonas attests, "The 16:9 format is a wonderful for compositions; there's so much more peripheral vision. The compositions that are possible in high-def are such a plus that I wish we could have aired the episode in 16:9." (Unfortunately, "The Other Cheek" was broadcast in 1.33:1.)

Bagdonas adds that he didn't

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experience any compositional problems because of his unfamiliarity with 16:9. "Even if you're not protecting for 16:9, you're always protecting a margin of error, giving yourself room on the sidelines in case you want to pan left or right."

D'Elia concurs, but notes that the filmmakers "didn't compose for 16:9, because nobody has 16:9 sets yet. We protected the 16:9 area, but still composed for the regular TV ratio. We just made sure there wasn't a grip stand or an extra waiting for a cue in that extra area of the screen. As a director, I find it exciting that in the future, when 16:9 is the norm, we'll be able to compose shots as you would for theatrical features."

D'Elia recognizes that the transitional period — during which consumers will slowly switch from 1.33:1 to 16:9 televisions — will present some creative problems. If the script requires an actor to enter the screen from either side at a precise moment to make the comedic or dramatic point, a choice will have to be made. Should you make the joke work in 1.33:1 or in 16:9? "Those timing concerns could be a problem," D'Elia says. "Hopefully, as the technology advances and people get widescreen HD sets, we'll just start composing for them. People with the older [1.33:1] sets will be missing out, but that's just what is going to happen. It will be a bit like it was when programs were first broadcast in color — if you had a black-and-white set, the contrast wasn't quite right."

Did the temporary transition to HD affect *Chicago Hope*'s actors? Bagdonas recalls, "They knew they were going to be shot in high-def, and Hector [Elizondo] asked if anything would be different for him. I said 'Not at all.' If we hadn't told them about it, they wouldn't have known the difference." Makeup and hair considerations were unchanged as well.

D'Elia fondly remembers the speed with which the episode was shot. "We normally shoot 12-hour days," he says, "but on 'The Other Cheek' we finished early every day. It was one of the easiest shoots I've ever had, but I think it was the nature of the episode more than anything. In a normal episode, we might have anywhere from 30 to 50 scenes. We had 146 for this one, but because of the nature of the script, the episode had to be shot as if it were a documentary. We weren't doing the type of precise setups we usually do. We just went in, shot it, and tried to make it unrehearsed."

During takes, the cinematographer, director and script supervisor carefully watched the monitors, but they never called for playback. D'Elia says, "In my mind, I just thought we were still shooting film, so I never played anything back." He adds that when the crew shoots with 35mm,

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"we have video *assist,* but not playback. I'm a guy who directs film, and I want to work with what I see and what I think works. Playing things back slows down the process, and you start to distrust your instincts."

The front end of the postproduction process for "The Other Cheek" was identical to other episodes of the series shot on film. Supervising producer John Heath says that the post team made center-slice cassettes (eliminating the sides to come down to 1.33:1), and digitized them into the Avid as usual. Understandably, the online process at Laser Pacific's high-definition lab was a bit more complicated than usual, but the technicians had anticipated a few new twists on such a pioneering effort.

What does the future hold for episodic drama and high-def? The consensus is that the shows that currently shoot on film will likely continue to do so. However, more and more studios will require that a show be finished in HD for archival purposes, because they recognize that it won't be long before HD transmission is the standard. At the Sony broadcast-night reception in Studio 36, a guest asked when CBS would begin letterboxing all of its shows on the air. "That breakpoint is going to be very difficult to reach," responded Charles Cappelman, CBS senior vice president of West Coast Operations and Engineering, "but there's going to be some magic point when enough of a percentage of the audience is watching in 16:9 that we will start to compromise the 1.33:1 center-only image."

"Long before that happens," Plus 8 Video president Marker Karahadian says, "more and more studio production executives are going to be considering the economics of not only finishing in HD, but shooting in it as well, especially when progressive-scan, 1080-line, high-def cameras become available in mid-1999. Cinematographers who take advantage of the opportunity to shoot HD now are going to be ahead of the curve when the word comes down to use it."

Reassuringly, Plus 8 Video vice president Chris Nightingale adds, "High-def is already advanced enough that it's acceptable as a master-quality image. We've had our cameras out shooting low-budget features on location for several smaller production companies. They've also been used for a Janet Jackson music video, for which the producer wanted the best video image possible of their multi-colored stage lighting. The cameras have even been on location in Alaska waiting for a moose to give birth. As far as feedback is concerned, we've heard nothing but good things from the cinematographers who have been willing to break the barrier and learn what HD can do for them." ■

IN MEMORY OF MARVIN STERN,

HE WAS A DEAR AND VALUED FRIEND,

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Photos courtesy of Columbia/TriStar Motion Picture Group.

Fingers of Doom

After years of working in the independent world, director of photography Christopher Baffa got his first crack at a studio gig with the horror/comedy movie *Idle Hands*. The project allowed him to experiment with extremes in color, creating an exaggerated vision of suburbia lit up by garish yellowish street lamps

Cinematographer Chris Baffa lends his digits to director Rodman Flender on the horror/comedy *Idle Hands*, the terrifying tale of an evil appendage run amok.

by Stephanie Argy

Photography by John P. Johnson and Kimberly Wright

and brilliant patches of primary colors. According to Baffa, the completed picture offers more laughs than scares, but its overall look remains dark, with no concessions made to comedy's traditionally high-key style. "I think it's great that we made a comedy that looks more like a horror movie," he says.

Directed by Rodman Flender (whose credits include the TV series *Dawson's Creek, Millennium, Chicago Hope* and *Party of Five*, among other high-profile shows), *Idle Hands* is a lighter take on a theme once explored by budding auteur Oliver Stone in the 1981 chiller *The Hand*. The film tells the tale of a teenage slacker whose hand becomes possessed by an evil spirit and goes on a killing spree, murdering the boy's parents, his best friends and anyone else that gets in its way. In desperation, the boy amputates his own hand, but the disembodied

appendage continues the rampage on its own. "And the movie's a comedy!" Flender reiterates with gusto.

When considering a style for his genre-blending tale, the director wanted the film's look to be as outlandish as the story itself. "When you get your big studio break, you don't know if it's going to be your last, and I wanted to make some bold statements," he says. While considering various cinematographers for the job, Flender, who began his career at Roger Corman's studio, remembered Baffa, a fellow alumnus of the B-movie maven's production house. The pair had worked together only once, while prepping a Corman movie together. Though Flender ended up leaving that project before principal production, he never forgot his enjoyable working relationship with Baffa. "I had some pretty wild ideas, and Chris just ran with them," he remembers. "I wanted to finish what we had begun." Flender's choice of cameraman was one well-suited to the macabre mania of *Idle Hands*. During the mid-Nineties, Baffa enjoyed a tenure on the blood-and-guts circuit, shooting such Concorde-New Horizon films as *Piranha*, *House of the Damned*, *Alien Avengers* and *Humanoids from the Deep*. His other credits include such dark fare as *Phantoms*, *Suicide Kings* and *Carnival of Souls*.

Before they could join forces, however, Baffa and Flender had to convince the producers and studio executives that they would make a good team. Traditionally, directors helming their first studio movie are paired with more experienced cinematographers. Flender notes that he told Columbia's men in black that "it was important that I work with a director of photography — and crew — whose talent I had absolute confidence in, and who had as much stake in the project as I did." He reminded the executives that Baffa's career would be riding on getting the movie right. Flender also pointed out that almost every director who has worked with Baffa has hired him again. The studio relented, and Baffa was brought on board. "It was a risk that paid off in spades," says Flender. (The director's high opinion of Baffa was recently seconded by *Daily Variety*, which named the young cameraman as one of "10 Cinematographers to Watch.")

From the start, Flender pushed Baffa to his limits. "Rodman instilled me with a sense of adventure and experimentation," says Baffa. "*Idle Hands* is a wacky story. The script has supernatural, horror and comedic elements, so Rodman was not interested in creating a normal world. He didn't want to go over the top — and we had a lot of conversations about what 'over the top' meant — but he definitely wanted to push the envelope."

The picture's visual approach was particularly influenced by *Daughters of Darkness* (1971), *Jack Be Nimble* (1994) and the films of Italian horror maestro Dario Argento, particularly the operatic *Suspiria* (1977), which was lushly photographed by Luciano Tovoli, ASC, AIC. Argento gravitates toward vivid colors, and Flender wanted Baffa to do so as well. "It was very exciting to me to have a director say, 'I'd like to have a lot of color in the movie, so I want to use a lot of colored lights,'" says Baffa. "I'm at the point in my career where that's very interesting to me. That kind of approach raises some intriguing questions. What does color mean? For that matter, what does any aspect of the photographic process mean, and how does it enforce something larger, whether it's a story point, or an emotion, or a mood, or a tone? It's not just the image that's important, but also what's *behind* the image."

Baffa had been wanting to move towards more zesty photography anyway, and was delighted to break the boundaries of color. However, he did have one request of the director. "What I said to him was, 'All I'll ask of you is to help me keep it honest.' And I said basically the same thing to the production designer [Gregory Melton, whose credits include *Children of the Corn II* and the *Tales from the Crypt* films *Demon Knight* and *Bordello of Blood*]: 'If you can give us a green curtain, and we put a light though that curtain, and that light comes out green, at least I'm telling myself it's from the green curtain.'"

While Baffa doesn't consider himself a slave to motivational cinematography, he does believe that some link should exist between the look and its ostensible sources — some sense of direction for the audience to grab onto. "It becomes as issue of not wanting to alienate the audience," the cameraman submits.

Opposite: Elden Henson sates his sinister appetite with some finger food. This page: Director of photography Chris Baffa is flanked by actors Seth Green (with bottle protruding from skull) and Henson (head in lap).

Fingers of Doom

Right and below: With the help of a special table rig, Flender (with headphones) and star Devon Sawa prepare to create the illusion of Henson's disembodied head.

"You want to use the elements of photography to bring the audience in, not push them away."

For assistance on such matters, he turned to his longtime friend and gaffer, Andrew Glover. "I talked to Andrew before we started, and said to him, 'Try and push me. If there's a light in a shot, and it's starting to look kind of normal, let's color it.'"

Because much of the movie takes place at night, the first question on the table was 'What should 'night' look like?' Baffa and his team asked themselves, "Would our nights be blue, or white, or something else? We all decided we wanted to do something new, so we established that nights in the world of *Idle Hands* would primarily consist of this yellowish sodium-vapor light." Glover put together packs of gels that would produce such a yellow tinge and then varied the combinations slightly, depending on the location.

Baffa and Glover introduced more color around the exterior of the lead character's house with Malibu yard lights bought from a hardware store. "I would love to say that we used some new high-tech kind of light, but they basically were Malibu lights," says Baffa. "'They had little color filters built right into them, and came in primary colors. Nothing fancy like, say, a Rosco 189 — just blue, red, yellow, green." Glover put the lights into the matching metal frames — also obtained from the hardware store — and hid the lamps in the bushes. "Rodman loved it, and the production designer loved it," says Baffa.

This graphic exterior lighting style also allowed Baffa and Glover to justify a more outrageous look inside the home. "We realized we could always go sodium vapor, because there's a sodium-vapor light somewhere in the night exterior. But by using the Malibu lights, we allowed ourselves to say things like, 'Well, let's put blue light on those bushes outside those windows, let's hit those bushes with green light, and let's have yellow coming through that window!"

Baffa also established a color progression based on the narrative's nastiness. "The movie gets more colorful as the evil becomes more prominent," he says. During the 12-week shoot (six weeks on location in Pasadena, California and another six on stage in Santa Clarita, California), gaffer Glover had to keep track of color patterns and lighting ratios. "That's the beauty of someone like Andrew," says Baffa. "You don't have to think about it."

According to the cameraman, the increasingly bold use of color arose partly by design, and partly out of the crew's increasing comfort level. By the time they had to shoot an important sequence set at a dance, the entire crew was ready to push the colors to their most extreme.

Up to this point, there had been a wide-ranging application of distinct shades. But Baffa and Rodman had not made much use of blue, except in the bedroom of the lead character's love interest. The dance sequence, however, featured a slightly different hue of blue. This was complimented with a huge orange jack 'o' lantern — measuring some 40' to 50' across — that the art department created by hanging orange tarps in front of an immense semi-circular window. The tarps were then backlit with a small army of Maxi-Brutes. Baffa notes the adds that the mixture of blue and orange endowed the dance with a romantic yet dangerous ambiance.

This two-tone lighting was augmented by prominent back lights, which swept through the image like searchlights. According to Glover, the production ordered stage Xenons from Oleson, a company that specializes in lighting for rock concerts. Baffa's crew then installed

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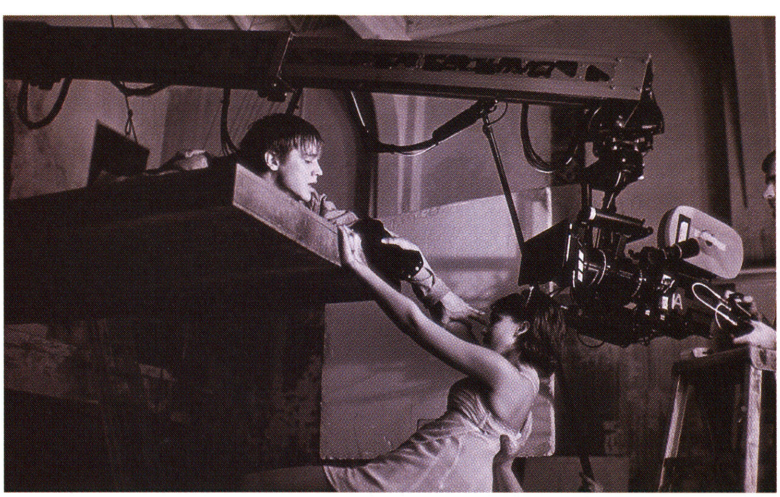
Above: Our handless hero (Devon Sawa) bemoans his fate to his lovely companion (Jessica Alba), who soon discovers the hazards of keeping questionable company (below).

these units into scissors lifts so they could rotate the beams across the dance floor.

Much to Baffa's relief, Columbia was very supportive of his wild color schemes. "We were lucky scheduling-wise," he says. "We kind of started with some of the less wacky color schemes, and by the time we ramped up to the really wacky shots, the people at Columbia had seen some of the footage and liked the fact that it didn't look like a normal movie."

Reflecting on his use of color, the cinematographer is thrilled that *Idle Hands* has a more experimental, expressionistic approach than most of his previous work. "I'm excited that we pulled it off as well as I think we did at times, and that we had the courage to go where we went, even if it didn't always work. There were a couple of instances where I thought, 'That's a little over the top, a little wacky, or a little like Vegas,' but at least it's an attempt to raise the images to another level, and that's tough to control. Then again, film is a subjective art form, and there were people who loved some of the scenes where I thought we went too far."

Assessing his overall lighting approach, Baffa admits that although he has developed an appreciation for a harder ambiance, he still gravitates toward very large, soft sources — often Maxi-Brutes projected through muslin stretched across a 12' x 12' frame. "I really love projected light,"



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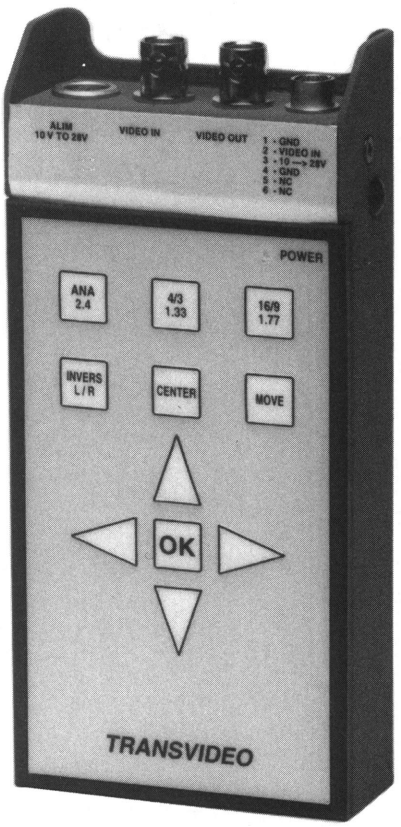

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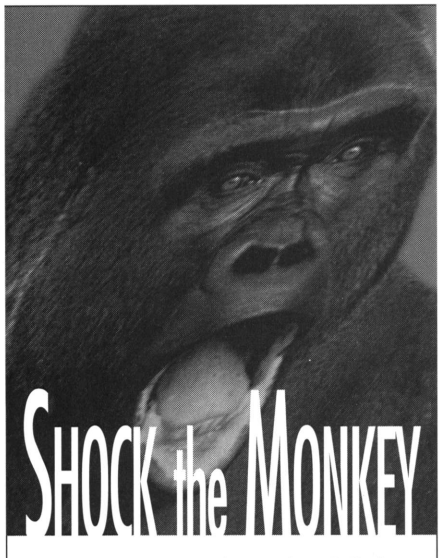

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he says. "However, I also really love contrast, which creates challenges for my key grip, Greg Hewett. My favorite techniques are soft sidelight and backlight, and if the backlight can be broken up by a tree, all the better."

On Baffa's latest project, however, harder light did help enhance the evil aura of the tale's disembodied hand; lit with very harsh backlight, almost two stops overexposed, the hand's presence would often be announced by a long, ominous shadow.

The hand actually belonged to Chris Hart, who also played "Thing," the dexterous roving hand in the *Addams Family* movies. To make sure that there was no mistaking this sinister hand for its genial, playful counterpart from the Addams household, Hart did a completely different performance. Whereas Thing frolicked through the hallways, wrist high in the air, this picture's severed hand drags itself angrily across the ground, wrist low behind it. The wrist's low, dangling position made it more difficult for Hart to keep his body out of the camera's way, so Rodman and Baffa opted against shooting in a widescreen format. "It would have been hard to hide things in a 2.35:1 image," notes Baffa.

"I was lucky that I had a young, beautiful cast. A lot of actors get nervous when they see a lens in the 20mm range up close."

— director Rodman Flender

The camera package for *Idle Hands* came from Panavision Hollywood, with whom Baffa has enjoyed a long relationship. "I can't say how much their friendship has helped," Baffa says. He adds that Panavision had nothing but praise for his entire camera crew, which included operator Dan Ayers, first assistant John Scott and second assistant Cheli Clayton. "It was the dream crew," says Baffa. "There were a lot of times when I looked around and felt like a proud father."

Baffa reports being completely satisfied with his assigned Panavision Gold and G2 cameras, as well as the company's lenses. "The color and clarity of the lenses — especially the Primos — is amazing," he attests. "You can't flare them if your life depends on it — mine did once, and I tried, and I couldn't! If the Primos catch a light, they deal with it like your eye would. They see it, but it doesn't make the whole image go wacky.

"I also love the fact that with Primos, you start with extreme razor sharpness and then diffuse it," Baffa adds. His own use of diffusion varies, depending on the film and the story being told. "Every now and then, I'm a fan of black ProMist," he says. On *Idle Hands,* though, he tried not to use too much diffusion.

Sometimes, the subject matter itself was so outrageous that it needed no enhancement. In one sequence, for example, the lead character's murdered friends come back to life as zombies — one with a broken bottle sticking out of his head, and the other with his head completely separated from his body.

In other instances, Flender wanted to convey the story's strangeness through its photography, especially via the use of wide lenses. "I was lucky that I had a young, beautiful cast," Flender says. "A lot of actors get nervous when they see a lens in the 20mm range up close."

Flender's favorite lens was the 17.5mm, which he liked so much that the camera crew dubbed it the "Rodman." The rest of the crew soon caught on to what the "Rodman" could do, and even knew where the

edges of frame would be when the lens was fitted to the camera.

On the other hand, any normal-looking lenses were avoided. The 50mm, in particular, became known as the dreaded "anti-Rodman," and was used as rarely as possible. When it came time to employ a zoom perspective, Panavision's 11:1 (24-275mm) T2.8 was the weapon of choice. "The 11:1 is wonderful, and it basically allows you to get anything you want — except the 'Rodman' look," says Baffa.

Idle Hands had so much effects work that before Baffa made any decisions regarding film stocks, he consulted with Ted Rae and Pete Kuran of Visual Concept Entertainment to find out which emulsions would be most suitable. "That was one of my first questions to Ted and Pete," remembers Baffa. "What kills you, and what do you love? It was a consideration I was not so familiar with."

Baffa had done some green-screen work for commercials, and because he'd had the time and ability to pump up light levels, he employed very slow speed films on those shoots. On a narrative movie, however, he didn't want to be locked into a slow stock. "I wanted to have some freedom, but I also didn't like the idea of going back and forth within a given sequence," he explains. After talking with the effects team, he decided to shoot on Kodak's Vision 500T 5279, but he made a rule that any sequence requiring even a single effects shot would be filmed entirely on Kodak EXR 5293. This gave Rae the fine grain structure needed for his own work, yet also allowed Baffa more latitude to exploit a low-light style. "I felt okay intercutting 500 and 200 ASA, but I didn't want to drop down to 100 ASA," Baffa says. "I just like to be as close as I can in terms of grain structure."

Once again, Glover became the pointman — this time, he oversaw what stock was going to be used

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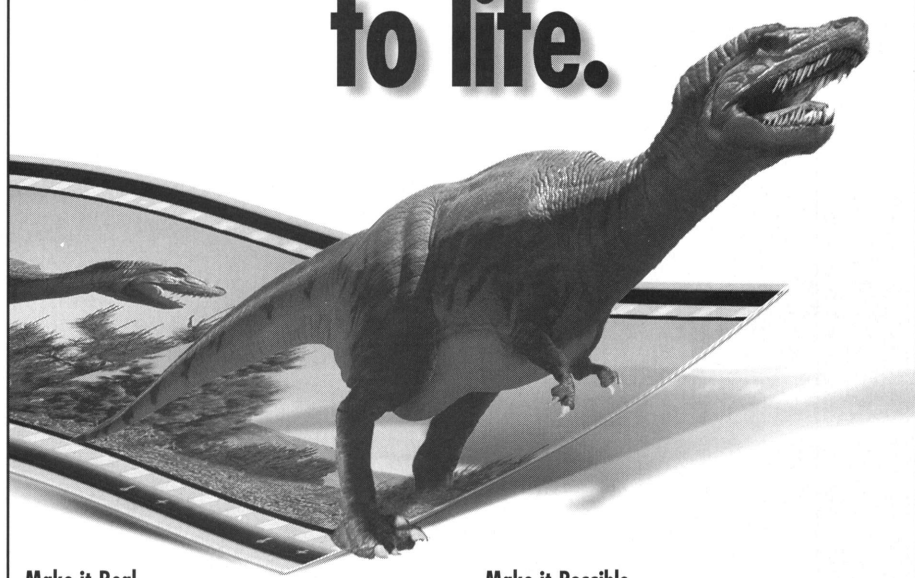

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for which scenes. And if necessary, he would order extra lighting units. "There was never a time when I felt that we were really getting killed," says Baffa. "Most of the complicated stuff was designed to be done on stage, where we had the ability to get to a stop of T8, or whatever we needed to get to."

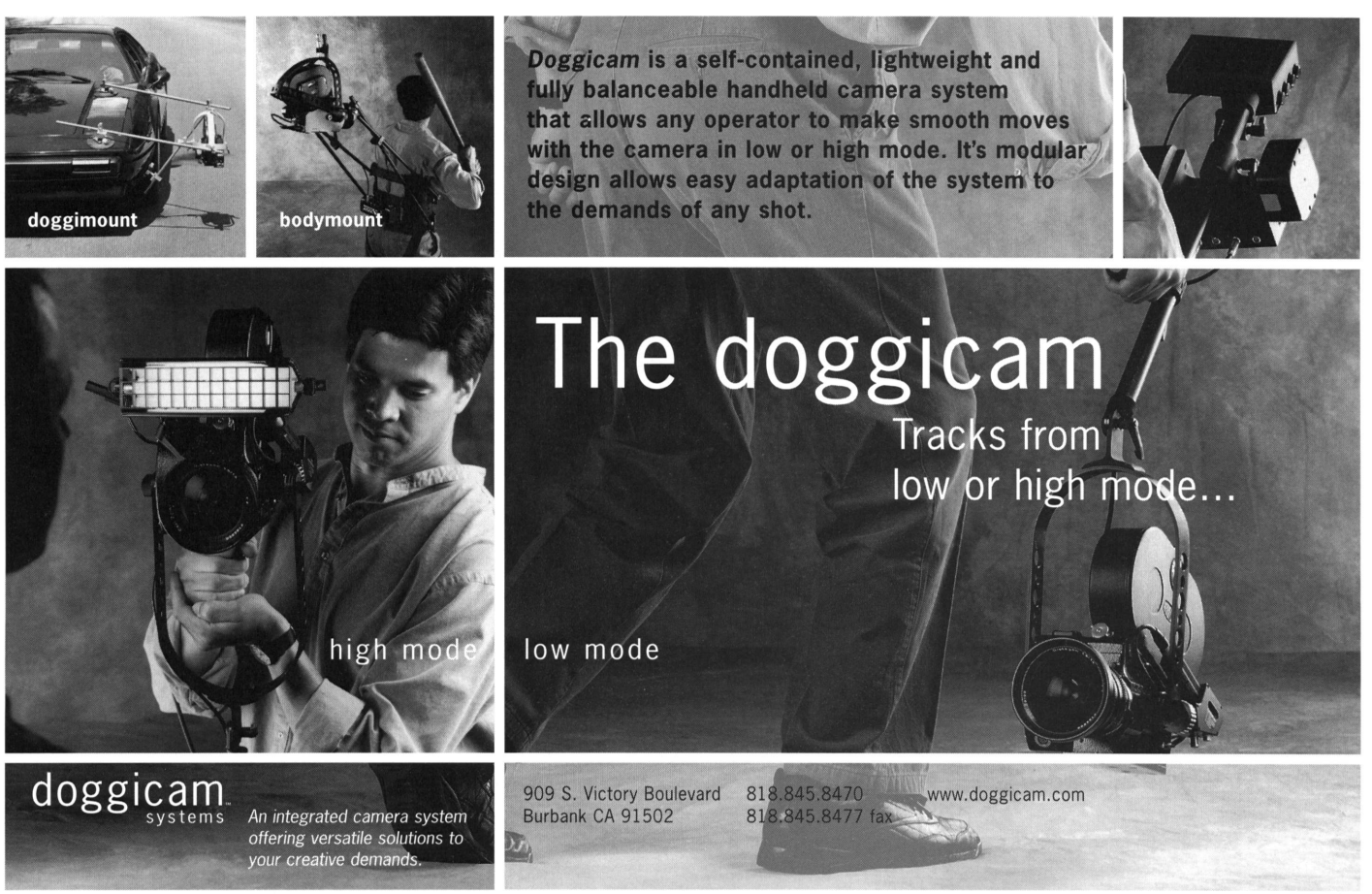
Baffa's concern for the visual effects team's needs endeared him to both Rae and Kuran. "Chris was a dream to work with," says Rae. "If we needed a certain stop, he gave it to us. If we had an effects shot, he'd give us a little more latitude." Rae adds that Kuran, who has been in the effects business since he worked on *Star Wars* at the age of 17, told him that as far as the elements were concerned, *Idle Hands* was the best-shot film he'd ever worked on.

Still, Baffa admits to having been a bit daunted by the film's effects requirements when he started this project. "I had never done a movie weighted this heavily in effects, and I credit both Pete and Ted for being very accessible." Rae was a great help in particular, talking the cameraman through the process and teaching him what he needed to know. "He was great at educating me," says Baffa. "I also found that I understood some of the process more than I thought I would."

The relationship between a cinematographer and visual effects supervisor can often be a fractious one, but both Rae and Baffa were quite intent on cooperating for *Idle Hands*. "We very quickly became allies," says Baffa. "A lot of the insecurity went away because I could go to Ted and say, 'I don't understand. I can light the greenscreen to a T8, but why do I have to?'"

Of course, Baffa's primary concern was achieving Flender's vision, which he always put ahead of all other considerations. He continually asked the visual effects team, "'What do you guys need to get what Rodman wants? We're willing to compromise, but we also want to stay close to his idea.' They started not to feel a threat, but more freedom to say, 'If you'll let us do this, we can get you closer to what Rodman wants.'"

According to Glover, even though the relationship between the production crew and the visual effects team was good, the effects work did cause its share of technical constraints. In addition to the extra lighting needed for motion-control and other effects shots, the production crew sometimes had to tie the motion-control setup into their lighting board. All colors also had to be cleared through Rae; for example, the sodium-vapor pack that gave the night scenes their distinctive yellowish cast had to be modified whenever effects work came to bear under that particular light. To help Rae along, the crew would pull the Y-1, one of the three gels in the pack. "Ted would



say, 'It just gets rid of that yellow spike,'" says Baffa.

The first-unit crew spent about two weeks doing greenscreen work, using a digital screen developed by John Erland of Composite Component Company. Rae explains that Erland took into account the responsiveness of various film stocks, screen saturation, and the type of phosphors inside the greenscreen tubes. All those considerations were brought together to create a screen and lighting combination that allows an emulsion to reproduce a purer green than could be done with a conventional greenscreen. This formula makes it much easier to pull a matte, even if an object within frame is of an emerald shade. "You could even wrap someone in some of the other greenscreen material and still pull them out," says Rae.

Rae is also a cinematographer himself, and happened to shoot some second-unit work on *Idle Hands*. He says that understanding digital processes is essential for today's directors of photography, and those who view such skills to be unnecessary are not being realistic. "If you want to maintain an influence over your image, then I think we're all going to need to understand more," he says. Yet while visual effects artists do have the power to alter an image, Rae is quick to add, "I don't want to send the message that you're the author, just because you know how to manipulate the image."

If some misunderstanding occurs between the camera and visual effects departments, much of it may stem from the lack of on-set experience among many younger visual effects supervisors. "They don't know who to go to," says Rae. While the effects artist doesn't want to harp on the younger generation, he's very surprised at how little is known about visual effects history. "They know about films from *Terminator 2* onwards," he says. "In my day, you couldn't be a visual effects supervisor until you could actually do the work." Nowadays, says Rae, situations have become more specialized, leading to a spate of supervisors who cannot sit down and do a composite. "What if you reach a situation where you have to break the rules?" asks Rae. "You have to know the rules to break them. I'd like to encourage people to learn the history, learn the basics. If you want to be truly effective as a visual effects supervisor, learn the nuts-and-bolts of how movies are made."

Thanks to a dependable crew, Rae's instruction and assistance and, especially, Flender's support, Baffa found to *Idle Hands* to be an excellent opportunity to learn and experiment. "It was liberating to work with someone who was so enthusiastic," says Baffa of his director. "I could not have asked for a nicer environment in which to stretch myself." ■

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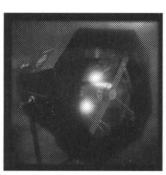

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Indelible Impressions

FAVORITE FORGOTTEN FILMS

Eight ASC members recall the films that helped to shape their careers in cinematography.

Interviews by Mark Dillon, Kathleen Fairweather, David Heuring and Eric Rudolph

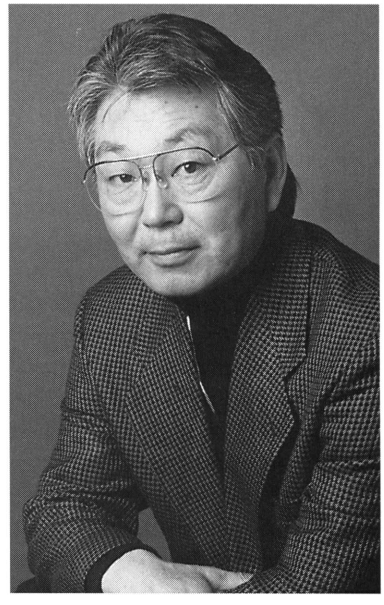
Anyone who loves movies can recall that one special film that made a lasting impression. For some, however, that momentous motion picture can provoke an epiphany: *That's what I want to do with my life.*

Recently, several *AC* writers asked eight ASC members — Hiro Narita, John Hora, Theo Van de Sande, Sandi Sissel, Donald M. Morgan, Wayne Kennan, Ken Kelsch and Francis Kenny — to reminisce about the films that had a special impact upon their lives and careers. All of their selections were interesting and unpredictable, and each director of photography offered an enthusiastic and thoughtful response. Collectively, the group's insights reiterate the notion that film is truly a universal language whose diverse array of themes can speak to viewers from a variety of different backgrounds.

Following are the eight cinematographer's responses, listed in the chronological order of the films they selected.

Indelible Impressions

Hiro Narita, ASC
Stray Dog (1949)



"In 1949, before he made the acclaimed *Rashomon,* director Akira Kurosawa made *Stray Dog,* an extraordinary cinematic accomplishment. Shot by cinematographer Asakazu Nakai, *Stray Dog,* although technically less polished, is in some ways even more ambitious and experimental than *Rashomon.*

"The film follows novice detective Murakami [Toshiro Mifune] as he searches through the streets of Tokyo's underbelly for a thief who stole his gun. The postwar depression is captured in a documentary-style montage reminiscent of early Russian cinema, using quick cuts of faces, feet, and streets in double exposure, as well as the techniques of fades, dissolves, and long shadows. Clues to the elusive gun are left on the victims it claims. In one mesmerizing and impressionistic scene, Murakami captures the murderous gun thief one morning in a broad field. The two wrestle in the mud, both gasping for air, and it becomes less and less clear who is the captor and who is the captive. In the background high above them, a lady plays Mozart on a piano, while a group of children sing as they pass the men thrashing about in the summer flowers. As is the case in many other scenes, no words are spoken — the emotion of the scene is carried by the visuals and cutting.

"Natural phenomena such as rain, wind, and heat are essential to the storytelling. Perspiration glistens on faces, and both electric and hand fans are ever-present, as are white handkerchiefs. Their use is not solely expressionistic — they provide something to which the actors react and alter their body language. Rain also carries emotion. When a young woman gives Murakami a lead to the murderer's whereabouts, rain pours down the hot, suffocating streets. Meanwhile, another detective

Slatted shadows add ambience to this scene from Akira Kurosawa's *Stray Dog,* an Eastern exercise in film noir photographed by Asakazu Nakai.

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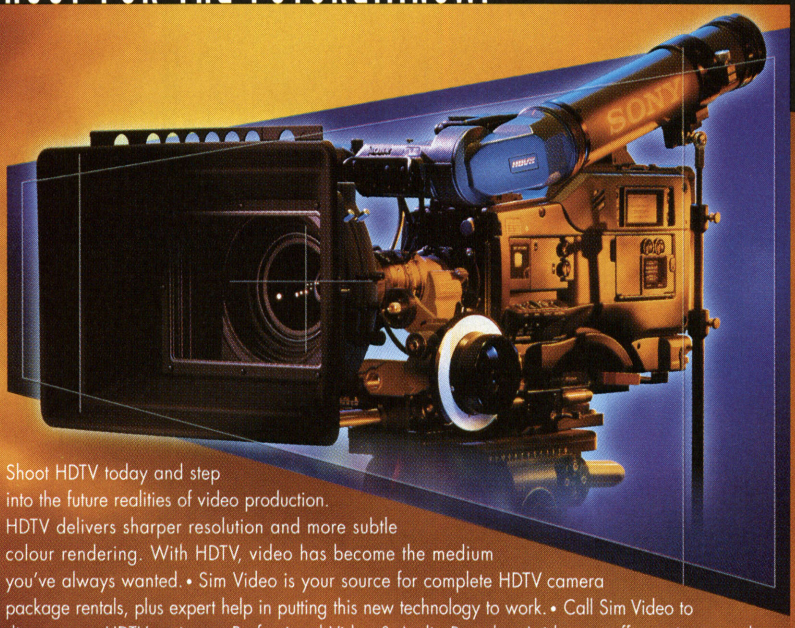

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encounters the murderer in the rain and is unexpectedly shot. Rain links the two scenes both visually and symbolically.

"Once the documentary style sets up the story, Kurosawa choreographs the actors and camera with increasing precision and economy. Many scenes have three characters, and although such situations would often result in much coverage from different angles, Kurosawa keeps the camera stationary, having the characters move within the confines of the frame. The timing is precise, and the blocking part of the storytelling is sometimes intensified by having the actors speak with their backs to the camera, engaging the viewer's imagination beyond what is actually shown.

"At other times, Kurosawa intensifies the viewer's emotions with moving shots and active cuts, creating a rhythm by having these techniques offset and build on one another. Many individual images are startling and beautifully formal, and they become even more striking when juxtaposed. Most impressive is the way compositions are born of precise dramatic need, and how far they go beyond the act of 'seeing' and into the realm of the psychological — what I call 'imagery.' Although the making of images is based on the formalities of craft, visually expressing and choreographing a psychological whole is art. Kurosawa's early cinematic experiments in *Stray Dog* already show his ability to create the unique imagery we have come to know from his later films."

—as told to Mark Dillon

Hiro Narita's credits as a director of photography include Never Cry Wolf; Honey, I Shrunk the Kids; The Rocketeer; Star Trek VI: The Undiscovered Country, James and the Giant Peach *and* Conceiving Ada.

John Hora, ASC
The Robe (1953)

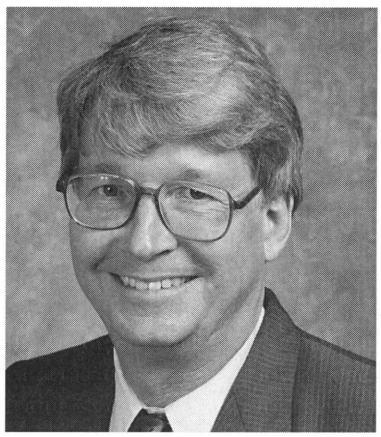
"For me, one of the most memorable cinema moments was the introduction of CinemaScope. In December of 1953, *The Robe* came to our local theater in Pasadena. At one point we were waiting outside by the candy counter for an earlier show to finish, and I sneaked in to get a glimpse. I saw this huge, wide image, and heard the marvelous music. I was sold before I even got into the theater.

"Once we got into our seats, we saw the conventional newsreel, and the last item on the newsreel was CinemaScope. They showed you the lenses, and the tests scenes made in Paris that were all squeezed. The newsreel ended, and the voice of Darryl Zanuck came through the darkness, explaining that this was Fox's new program that was going to revolutionize cinema.

"CinemaScope was a whole program. Because of Fox's ongoing engineering efforts — going back to 70mm, which they had introduced in the 1930s — they had superior technology. The package included the optics, the projection lenses, the add-on magnetic sound heads, the high-gain screen, the CinemaScope print stock, and their movies. The films were all to be shot in color, and in a manner somewhat similar to Cinerama, with a large wide shot, not close-ups. All of those films put a lot of grandeur on the screen.

"Then *The Robe* started, not with the normal Fox fanfare but with the choral music that is the main prelude. Here was this great four-channel sound, with three channels behind the screen and one surround channel. The chorus was in the surround, all around you and up in the sky. It was magical right at that very moment.

"On the screen at that point was the Fox logo, but a brand-new one created specifically for CinemaScope. Usually the Fox logo is against clouds. In the old versions, the searchlights cross in front of the '20th.' In the version created for



CinemaScope, they'd widened out that futuristic city that the '20th' is built on, and no searchlights crossed in front of it — they were off to the side. The background was a red curtain, and all of the main titles played against it. Then the curtain opened, as it would over the proscenium, originally. The film actually started with the opening of the curtain. It was a very theatrical kind of presentation — showmanship is what it was.

"*The Robe* was done in Beverly Hills, so Jerusalem, Palm Sunday, and

Amid the sumptuous trappings of ancient Rome, conflicted centurion Marcellus Gallio (Richard Burton, seated at left) contemplates the crucifixion of Jesus Christ.

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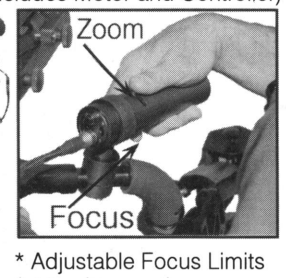

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all of that stuff is right there in Century City. It's a smaller film, but it has a marvelous antique quality. The art direction and design is terribly convincing. It's like looking at history books with illustrations of Roman ruins and so on. Of course, the cinematography by Leon Shamroy, ASC was superlative. The script was very nicely written, with good dialogue. Richard Burton is actually quite good in the picture, even though he considered it to be one of the worst things he'd done. The music, photography, art direction and dialogue just totally removed you from Pasadena in 1953, and put you back in the first century A.D. — and did so awfully convincingly.

"At the time, I was in junior high school. We were reading Caesar's journals, so we were all tuned up for anything that happened in *The Robe,* even though it was an awfully heavy story for kids. For us it was like time-travel to this ancient world. We went to see it each weekend while it played, basically for the image. We went to see it for the CinemaScope, to hear the music and see this gigantic wild image.

"At the time I saw *The Robe,* I was already on the path that would lead me to a life in cinematography. But the film left me with very strong impressions about what the film experience should be. Today's Imax films, which look and sound great, could take a lesson in showmanship from *The Robe.* To this day, when I am working on a film, I try to remember and re-create that sense of grandeur."

—as told to David Heuring

John Hora's credits as a director of photography include The Howling; Twilight Zone: The Movie (Episode 3); Gremlins; Explorers; Honey, I Blew Up the Kid *and* Matinee.

VILMOS ZSIGMOND, ASC

You can now own this magnificent 146-page, hardbound coffeetable book about the life and work of one of the great cinematographers of all time, Vilmos Zsigmond, ASC. Published in 1997 in conjunction with the Polish CAMERIMAGE International Film Festival of the Art of Cinematography (where Zsigmond received the prestigious Golden Frog Lifetime Achievement Award), this book features material and photographs never before made available — including many behind-the-scenes shots of Zsigmond working on such films as *McCabe and Mrs. Miller, Red Sky at Morning, Deliverance, Scarecrow, The Sugarland Express, Cinderella Liberty, Close Encounters of the Third Kind, The Deer Hunter, The Rose, The Border, Blow Out, The River, The Witches of Eastwick, Fat Man and Little Boy, The Two Jakes, The Bonfire of the Vanities, Intersection, Maverick, The Ghost and the Darkness*, and others. The book also offers extensive autobiographical information written by Zsigmond, as well as biographical material penned by veteran journalist Bob Fisher — making it a must for any serious film professional, film student or film buff, as well as a perfect gift for the cineaste in your life.

LASZLO KOVACS, ASC

This handsome 178-page volume was published in 1998, also in conjunction with the CAMERIMAGE International Film Festival of the Art of Cinematography, where Laszlo Kovacs, ASC received the Golden Frog Lifetime Achievement Award. It features many candid shots of Kovacs on the set of such films as *Targets, Easy Rider, Savage Seven, Psych-Out, Alex In Wonderland, The Last Movie/Chinchero, What's Up, Doc?, Paper Moon, Freebie and the Bean, Shampoo, At Long Last Love, Harry and Walter Go to New York, Nickelodeon, New York, New York, Butch and Sundance: The Early Days, The Runner Stumbles, F.I.S.T., Inside Moves, The Legend of the Lone Ranger, Frances, Ghostbusters, Free Willy 2, Legal Eagles, Copycat, My Best Friend's Wedding, Jack Frost* and others. The book also presents extensive biographical information about Kovacs and his creative vision, as told to Peter Tomarken, as well as biographical material written by Bob Fisher.

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Theo Van de Sande, ASC
Woman in the Dunes (1964)

Trapped in a metaphorical sand dune of desire, a man (Eiji Okada) and woman (Kyoko Kishida) consummate their passion.

"During the 25 years that I have been working in this profession, I have, in moments of despair, often asked myself a variety of questions: 'How did I get into this? What made me decide to spend my entire life searching for the perfect combination of shadow and light, the deepest blacks and the most fragile highlights, for the ultimate frame and the strongest perspective to tell an often not-so-perfect story? Why did I choose to study Film at the Dutch Film Academy in Amsterdam, rather than following a more predictable path in biochemistry at the University in the more protected South of Holland?'

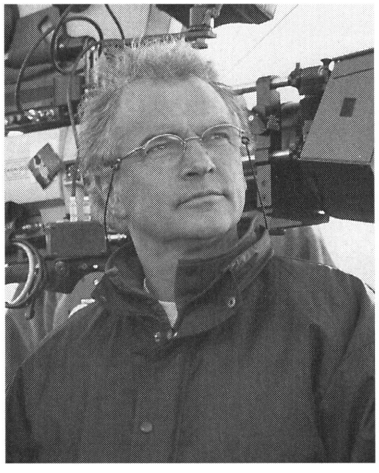
"Every time I ask myself these things, my thoughts go back to my last years in high school, when my brother organized a Film Liga, where I first saw the films of Bergman, Buñuel, Fellini, Antonioni and others. Already obsessed by still photography, I was taken away by these masters of cinema. For me, their films were magic, but they didn't make me decide to put everything aside and go into films myself.

"The one and only film that really had a profound influence on my decision was *Suna No Onna* (*Woman in the Dunes*), a 1964 film from the Japanese director Hiroshi Teshigahara. The picture is very powerful, but at the same time, so simple. It tells an abstract story so intense that its extraordinary black-and-white photography can even affect you physically.

"It's no wonder that *Woman in the Dunes* won the Special Jury Prize at the Cannes Film Festival and was nominated for the Academy Award for Best Foreign Language Film in 1964. In my opinion, the only reason that the film didn't win the Grand Prize at Cannes and the Academy Award was because it was far ahead of its time. At the same time, the picture was so incredibly powerful that it couldn't be ignored.

"Since that first time I watched *Woman in the Dunes* during my brother's Film Liga, its sensation has stayed with me, and I've always hoped that just once I'll find a project as good as this masterpiece. It's kept me going for a long time.

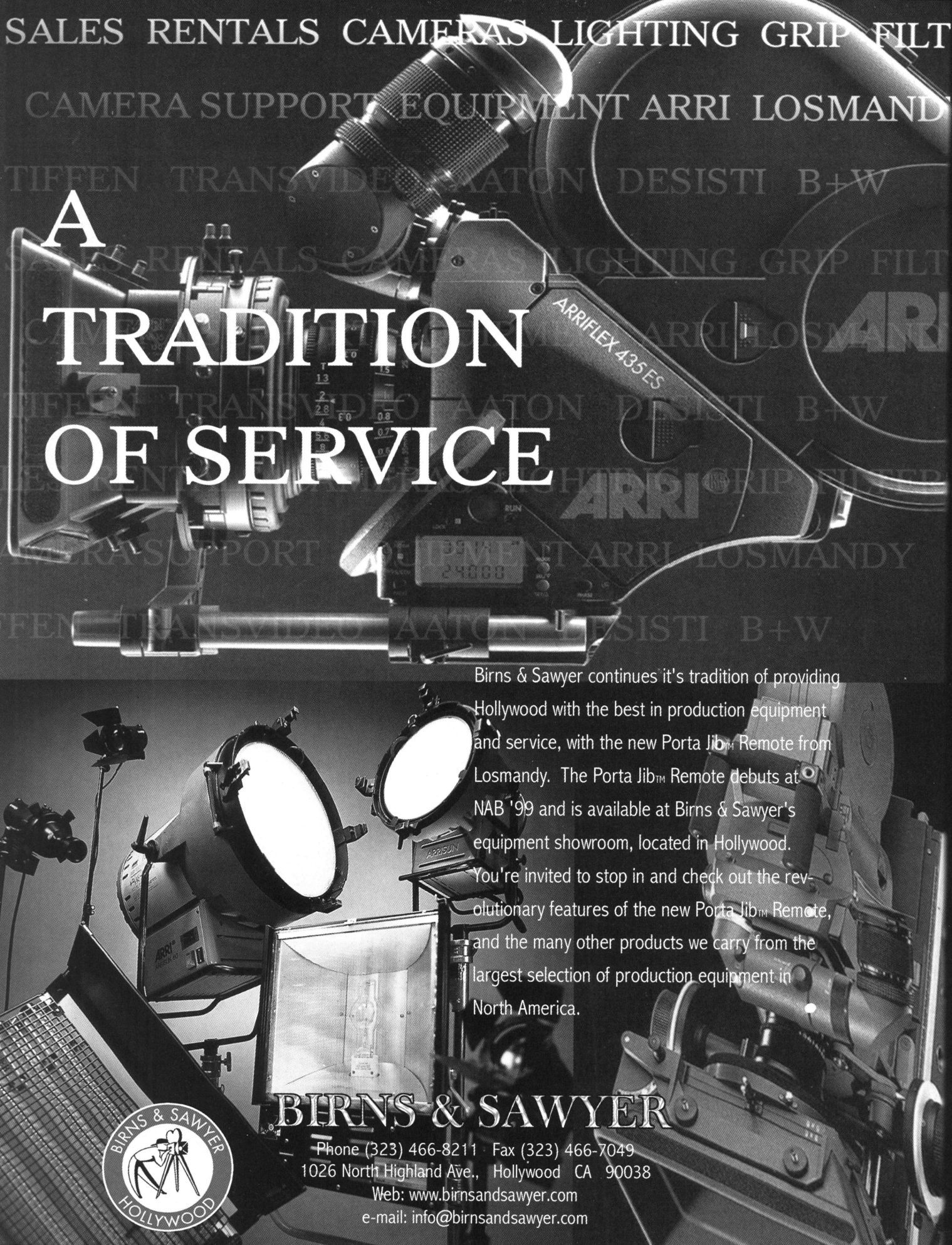
"This year, the picture was re-released. I was very excited and went to see it, hoping that the film would not appear dated — I was not disappointed. For me, *Woman in the Dunes* was as powerful, as intense, as erotic and emotional an experience as it had been in 1965. It is still a sensual, stunning allegory of poetry and power. [Cinematographer] Hiroshi Segawa's black-and-white photography is as modern now as I felt it was years ago, and Toru Takemitsu's musical score does more than simply serve the story.



"It's often said that a film cannot change a person's perception, but in my case, *Woman in the Dunes* had a profound effect on my decision about what to do next in my life."

—as told to David Heuring

Theo Van de Sande's credits as a director of photography include Miracle Mile, The First Power, Once Around, Volcano *and* Blade.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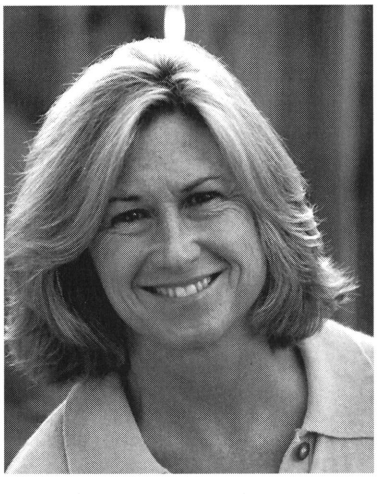
Boisterious schoolgirls raise a ruckus at their English boarding school.

Sandi Sissel, ASC
The Prime of Miss Jean Brodie (1969)

"The film that impacted me the most was *The Prime of Miss Jean Brodie.* I grew up in the small town of Paris, Texas, and by the time I was 14, I was going to movies constantly — at least twice every weekend.

"At that time, films like *The Prime of Miss Jean Brodie, Splendor in the Grass* and *Barefoot in the Park* were what all of my friends and I were watching. In each of those films, the situation involved a lead female character whose life took place outside of a small-town setting. I also felt as if I was a part of something outside my own environment, and seeing such films made me aware that there were other people in similar situations. I believe that this was when I realized that films were more than just entertainment



"One of the things that struck me about *The Prime of Miss Jean Brodie* was the impact it made on me in terms of strong female characters, like the teacher played by Maggie Smith. I think I was affected because female role models were scarce at that time, and I always admired my female teachers.

"I realize that this film couldn't have been farther from my own environment — it took place in an all-girl school in England — yet it was universal, and dealt with the relationships between a group of students and their teacher. I was absolutely absorbed in the story's rich characters. It was the same to me as getting carried away by a good book. Although my tastes and interests in film are always evolving, the thing I always come back to is the story.

"As far as the camerawork, I can't say that *The Prime of Miss Jean Brodie* impacted me cinematographically. I was not thinking in terms of cinematography at that time — I was a student in high school and was only involved with still photography. It wasn't until I got to film school that I started thinking in terms of the cinematography. Then my view of films changed again.

"When I was in film school, I became more interested in documentary filmmaking, because that kind of cinema didn't require a huge studio and budget. I was also drawn to documentaries through my interest and involvement in the anti-war, civil rights, and women's movements. One of the films that influenced me most during that era was Frederick Wiseman's 1967 documentary *Titicut Follies.*

"In a way, I see my own cinematographic style as an outgrowth of my love of both storytelling and documentary work. Because of my documentary background and love of films like *The Prime of Miss Jean Brodie,* I was able to shoot *Salaam Bombay!* in the way that I did. For me, *Salaam Bombay!* was like a melding of the two things I loved most: photography and story."

—as told to Kathleen Fairweather

Sandi Sissel's credits as a director of photography include Salaam Bombay!, The People Under the Stairs *and* Barney's Great Adventure.

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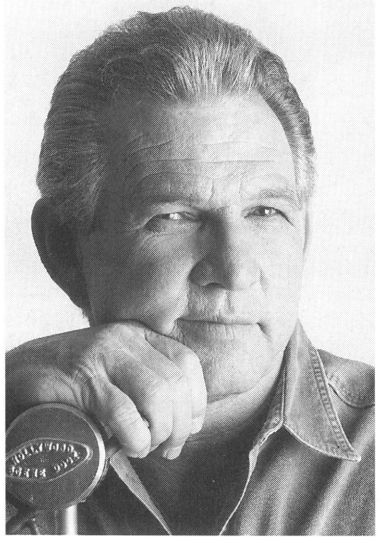
Indelible Impressions

Detective John Klute (Donald Sutherland) and call girl Bree Daniel (Jane Fonda) draw closer together during a mysterious case.

Donald M. Morgan ASC Cowboys movies and *Klute* (1971)



"I was born in Hollywood, so I've been around the movie business my whole life, but for a long time, it didn't dawn on me at all that I would ever really want to be involved in it. My dad was an animation cameraman, and I used to watch him poring over all of these cells, doing one frame at a time, and I would think to myself, 'That doesn't look like anything I want to do.'

"When I was very young, I saw the garbage man go by, and I wanted to be a garbage man. Then I got into a cowboy stage, and I watched cowboy movies endlessly. I always liked a lot of excitement, and rodeos and cowboys and all of that kind of stuff really turned me on. They used to have a theater on Hollywood Boulevard across the street from the Pantages Theater called the Hitching Post. It had a turnstile, and when you went up and bought your ticket as a little kid, you'd see all of these pegs on the wall; you used to have to hang up your cap gun before you went in! Once the show started, you'd see three Westerns. The seats were on metal rockers, and you could hear 100 kids going squeak-squeak, squeak-squeak. I'd just sit there and absolutely melt into the screen and become a cowboy in my mind.

"Movies were really big-time stuff to me. I used to get up in the morning and run around collecting bottles that I could turn in for change so I could go to the show. That was what movies meant to me in the beginning. I don't think I ever once thought about the cinematography; I never thought, 'Gee, I wonder how they lit that?' It was just that I loved watching movies.

"I was determined to have an exciting, adventurous career. I tried and failed at rodeo riding, race-car driving and all kinds of things.

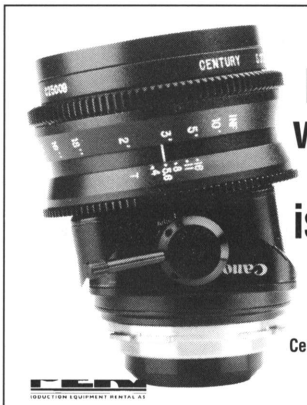
Whenever I wasn't chasing one of these dreams, I would work in film labs. I worked at just about every film lab in Hollywood.

"Years later, a friend of mine told me about Nelson Tyler, from Tyler Helicopter Mounts. He said, 'Don as much as you like excitement, maybe you'll like aerial work.' So I went over to the company, and found out that Nelson and I had played together when we were toddlers. I hung around for quite a while with absolutely no money. Every day I'd come home and my wife would say, 'Do you have a job there?' The bills were piling up, and I just kept showing up, and finally one day Nelson gave me some job to do. I loved it. I've been in the movie business ever since.

"Eventually, I started shooting on the ground, and slowly, with the help of a lot of people, I learned the craft. I had some wonderful teachers. I actually had to learn as I earned. Gordon Willis was a big influence on me. I must have watched *Klute* 20 times, and certainly *The Godfather* films. I also loved Owen Roizman's work. I did a lot of copying until I could start introducing stuff myself. I was [influenced by] Jordan Cronenweth, Haskell Wexler, Connie Hall and all of those guys — I'd go look at their movies and pick them apart. There's a little bit of all of those guys that I admired in me now, and I think every cameraman ends up that way. Those cameramen are the reason I'm doing what I'm doing. A little bit of what I stole from them goes onto the screen when I work today. And I'm sure that, subconsciously, something from those cowboy movies from the Hitching Post Theater ends up on the screen, too."

—as told to David Heuring

Donald M. Morgan's credits as a director of photography include Elvis, Christine, Starman, Geronimo (1993), Ruby Ridge: An American Tragedy, *and* A Lesson Before Dying.



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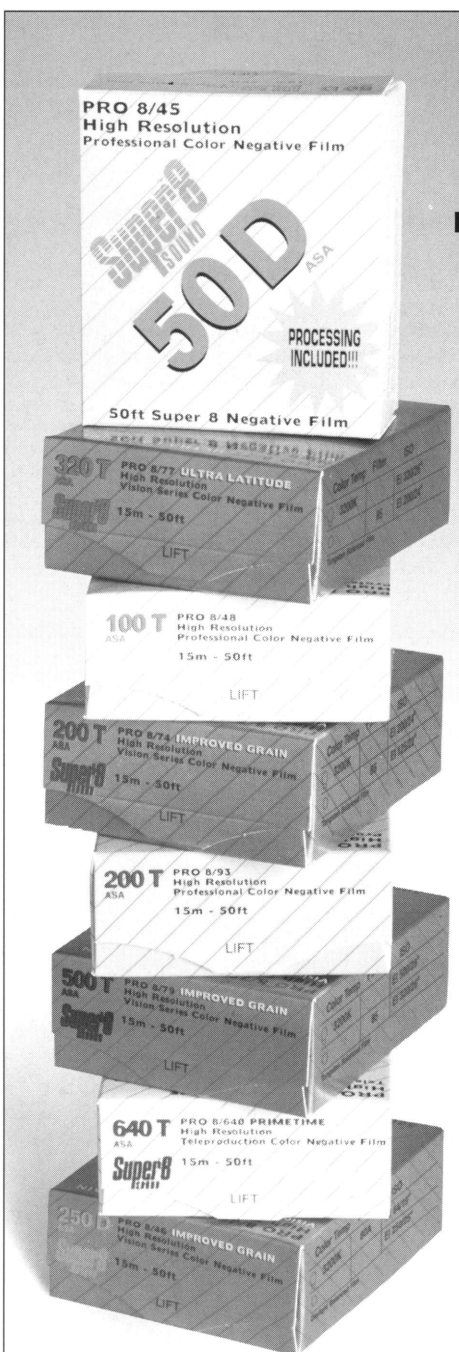

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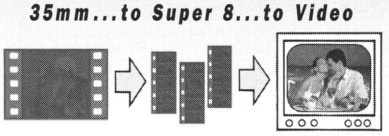

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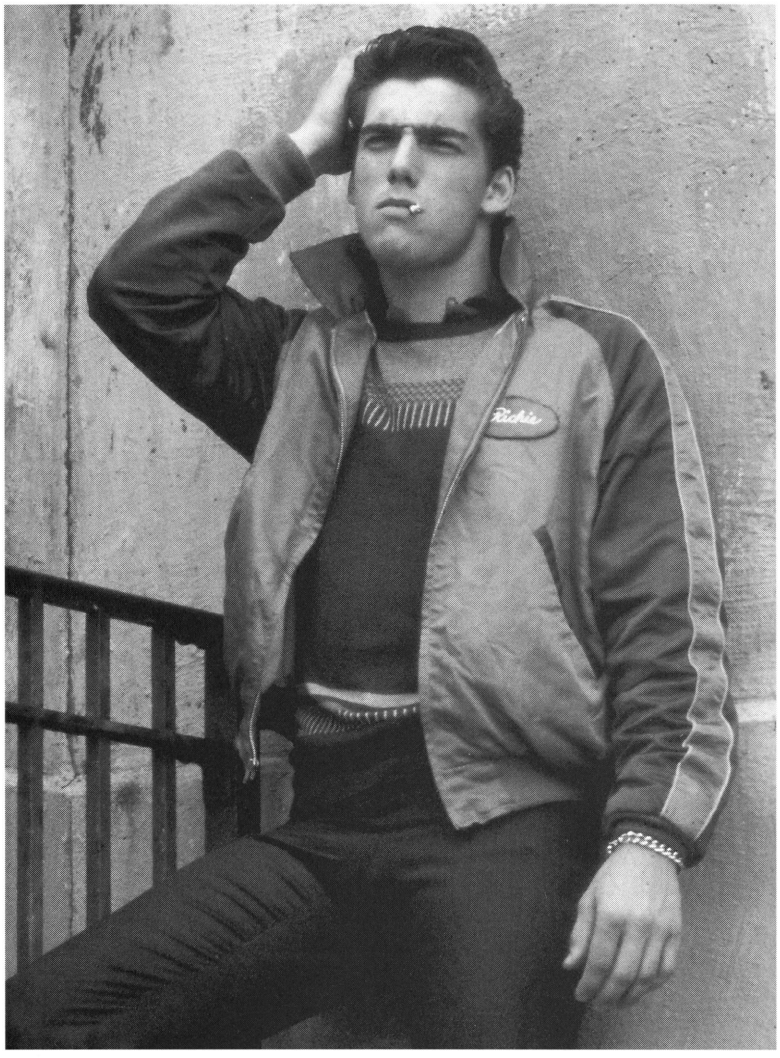


Ken Wahl perfects his cool posture in *The Wanderers*.

Wayne Kennan, ASC
The Wanderers (1979)

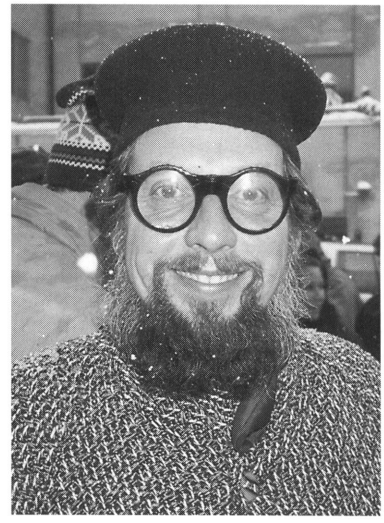
"*The Wanderers* was the picture that had the biggest influence on my career. I was 18 years old when I first saw that film, and I was blown away.

"It was directed by Philip Kaufman, and told the story of a neighborhood gang rivalry in the Bronx during 1963. There was no setup in the film at all; you were just dropped right in the middle of these characters' lives, with no back story provided. It was the first time I realized that a story could be told in a non-linear fashion.

"Stylistically, *The Wanderers* was most impressive. I enjoyed the sets, the costumes, and the way it captured the times. I thought it was really cool that there was a gang called the Baldies, and that they all had bald heads.

"Also, there was no real plot, so to speak — just kids going through a difficult time in a neighborhood where they were pulled between the Italian culture and the old way of life, and [feeling] a desire to be a part of the neighborhood. When I saw the film, I thought to myself, 'I want to do that.' Despite everything else, I think I was influenced most by the non-linear aspects of the story."

"I'm still waiting for a script like that to arrive on my doorstep, but I haven't had a film come along that is anything like *The Wanderers*. I don't generally go to a movie for the cinematography; I really go for the story. Think about it. When was the last time somebody walked out of a film and said they loved the cinematography and hated the story? They just say it's a bad film. Unfortunately, the cinematography gets dragged down to the level of the story. On the other hand, if the story is good, the cinematography looks even better.



"If you want to know my favorite film to watch, I'd have to say it's *The Sound of Music*. I love that film. Every single frame in that picture is so perfectly composed it could stand on its own. It is very noticeably symmetrical and very smooth. There is not one bad cut, and all of the pieces fit together perfectly like a puzzle. But in terms of the picture that had the most impact on my career, I'd still have to say, hands down, it was *The Wanderers*."

— as told to Kathleen Fairweather

Wayne Kennan's credits as a director of photography include the feature George B. *and the series* Seinfeld, NewsRadio *and* The King of Queens.

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Indelible Impressions

A father-and-son crime duo (Christopher Walken and Sean Penn) shed some light on their latest scheme.

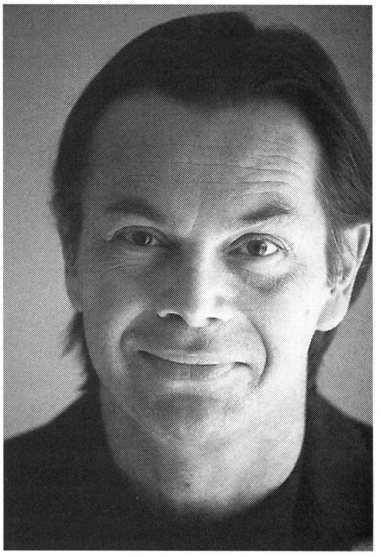
Ken Kelsch, ASC
At Close Range (1986)

"*At Close Range* is a totally stylized film; the story, the acting and the cinematography are all highly stylized. If you're going for that kind of look, you have to commit to it and be consistent, and the cinematographer, Juan Ruiz-Anchía [ASC], did so in this film.

"The picture tells the story of a world that is murky and dark, and it explores the idea of a father teaching a formerly estranged son to be a career criminal. That is not a high-key world; it's not comedy. The lighting should therefore reflect the darkness of the story and viewpoint. Stylistically, Ruiz-Anchía went the right way; the dark, shadowy lighting emphasizes the characters' inner turmoil, and the spiritual and intellectual darkness of the story.

"Ruiz-Anchía's philosophy of lighting and my own seem to coincide. I say this even though I'm proud that every segment on my reel has a different look. Basically, I'm against TV-type lighting, although it is becoming more advanced. Faces are no longer always two stops overexposed, compared to the sky, on television. That's a major step toward lighting reality, so I like the fact that Ruiz-Anchía didn't flat-light the faces in *At Close Range;* he especially kept his night and driving scenes in half-light or close to it. The night exteriors are kind of sourcey and not totally motivated, but the style is effective.

"During one scene in which Sean Penn is on the hood of a car tormenting the driver, with the windshield wiper in his mouth, one



entire half of his face is in shadow. To me, this helps tell the story of a kid trapped in this little town. I also love the use of the slow-motion on Mary Stuart Masterson when Sean Penn

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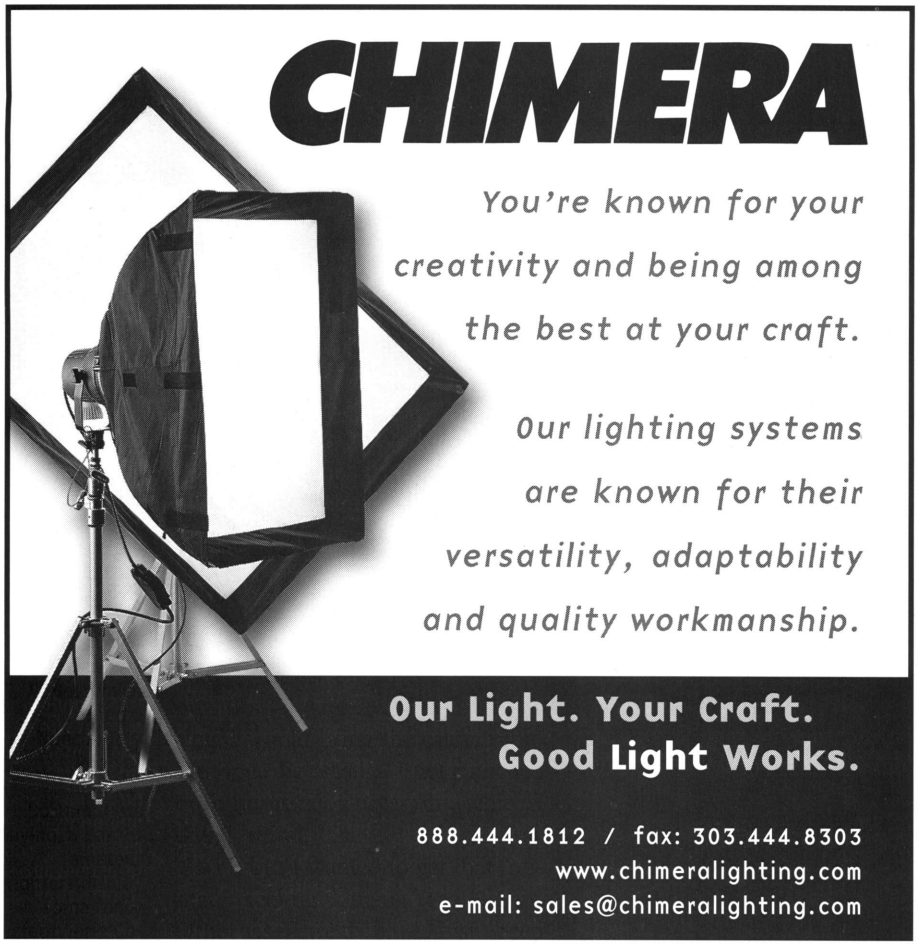

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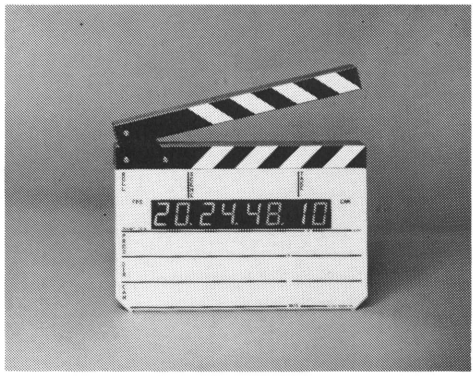

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first notices her in the town square. It's emotionally strong.

"The lighting is not naturalistic, however. Toward the end of the film, Christopher Walken [who plays the father figure, a master rural criminal] walks into Penn's mother's house. He's wearing shades and the living room is quite dark, and then he goes into the kitchen, which is 'properly exposed.' He gives the grandmother $12,000 in cash to bail out the Penn character, which she refuses.

"The lighting in the sequence isn't necessarily realistic, but it is right for the scene. I keep thinking about my undergraduate film professor, who would scream, 'Look, he's in the dark; what does that mean?' There's a certain validity to that. It's not just cheap symbolism; it's helping to establish the character through lighting manipulation.

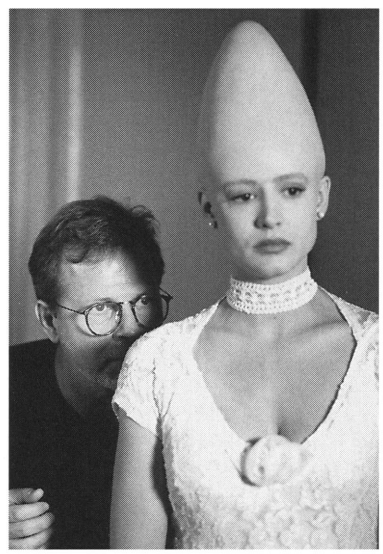
"The cinematography in this film tends to be noticeable, and that's dangerous territory. It's a personal gamble. Films should definitely have a signature look, but it has to come directly from the narrative. For example, *Days of Heaven* is a beautifully photographed film, and [cinematographer] Nestor Alemendros [ASC] did a tremendous job, but it's almost a failure in a way, because you come out saying, 'The film was beautiful, but I don't remember a thing about who was in it!' You have to be very careful not to staple the style onto the film. But I think Juan Ruiz-Anchía made the right aesthetic judgments in *At Close Range*."

—as told to Eric Rudolph

Ken Kelsch's credits as a director of photography include the features Bad Lieutenant, The Addiction, The Funeral, Big Night, The Imposters, *and the ABC telefilm* Rear Window.

In "The Tunnel," one of eight vignettes in *Akira Kurosawa's Dreams,* a commanding officer confronts a platoon of ghostly corpses. Below: Francis Kenny takes cover behind Connie Conehead (Michelle Burke) while shooting the comedy *Coneheads.*

Francis Kenny, ASC
Akira Kurosawa's Dreams (1990)



"It's nearly impossible to selected a 'favorite' film. So many films have influenced my work as a cinematographer, and some have moved my soul to tears. I have learned from these films and tried to emulate them. I often think of the stairway shot in *The Cranes Are Flying,* the parade sequence in *I Am Cuba,* the opening of *Saving Private Ryan* — a dirty hand shaking in fear.

"The one film that stands out as an unpretentious masterpiece is *Akira Kurosawa's Dreams.* It is indeed a dream. Whenever I read a script or go into a darkened movie theater, I like to think that I'm entering a dream. 'Man is a genius when he is dreaming,' Kurosawa said. Kurosawa believed in dreams as 'the fruit of pure and earnest human desire,' and that people while dreaming become 'fearless and brave, like a genius.'

"*Dreams* consists of eight short stories. Each story is visually stunning and unfolds in a [non-linear] way — such is the nature of dreams. The cinematography is breathtaking. It is rich, elegant, and most important, unpretentious. It is a celebration of the imagination. The film has a patience, unlike so many American films. It is relentlessly visual, with long stretches containing no dialogue. But there is a reason for it, and the viewer becomes hypnotized. The short stories are based on the filmmaker's own dreams, beginning with a Garden of Eden-like episode called *Sunshine Through the Rain,* in which a 5-year-old boy sneaks off to the forest to witness a fox wedding that has been forbidden to human eyes. This story is told through the eyes of the boy. The forest, and the adventure, becomes mystical — a metaphor for the journey to manhood. Like Japanese painting, the colors are rich yet desaturated. The camera moves slowly and patiently, and never calls attention to itself; it remains invisible. The spatial design is simple genius. We are constantly reminded of the relationship between man and nature.

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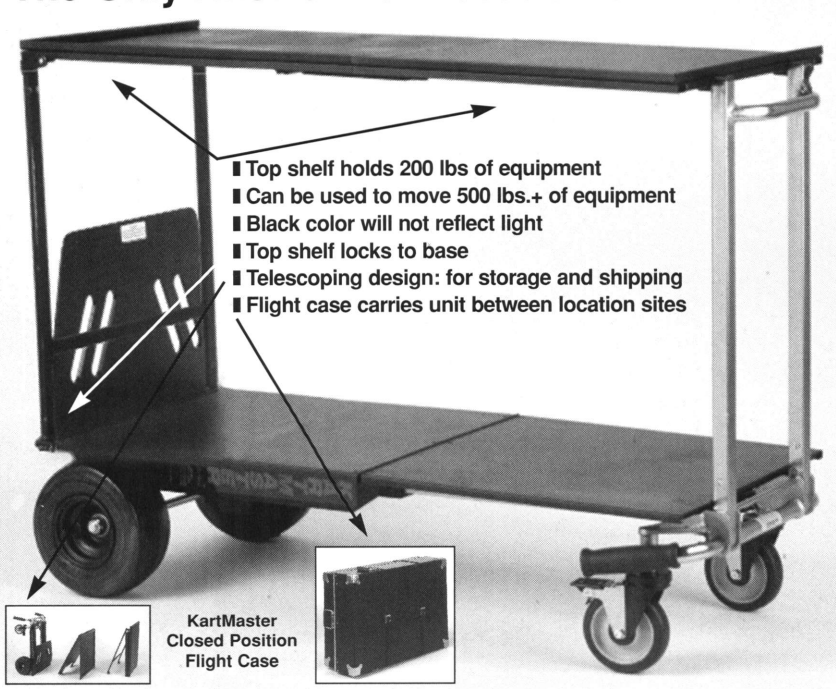

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Weeping Demon, a nuclear power plant meltdown begins in chaos and ends in misery, while in *Village of the Watermills,* heaven on earth is achieved not by technology but by a return to nature and a denial of human 'progress.' Living in Los Angeles makes us forget that we are also a part of nature and that the lust for convenience has, as Kurosawa said, 'dirtied the hearts of men.' While filming this sequence, Kurosawa told his crew that the theme was nostalgia for Mother Nature and 'the loss of the heart of mankind — therefore, the images of nature in this sequence must be extremely vivid.' The final image of a beautiful river seems to last for days, and you can't take your eyes off it. Once again, we become hypnotized. The image becomes a metaphor for the ethereal and the eternal.

"The other episodes are also impressive. In *The Blizzard,* a group of climbers succumbs to sleep during a deadly snowstorm; the storm sequence is a great reference for cameramen. *The Tunnel* is the guilt-ridden tale of a wartime survivor who confronts a platoon of men who died while he escaped. In the strange and wondrous *Crows* story, the viewer is literally drawn into a Van Gogh painting.

"*Dreams* is a masterpiece told by one of the greatest filmmakers of all time. In a world of chaos and uncertainty, it reminds us of who we are, where we live, and how we live our lives. Sometimes all of us need reminding; I certainly do."

—as told to David Heuring

Francis Kenny's credits as a director of photography include Heathers, New Jack City, Coneheads, Wayne's World 2, Bean, A Night at the Roxbury *and* She's All That. ■

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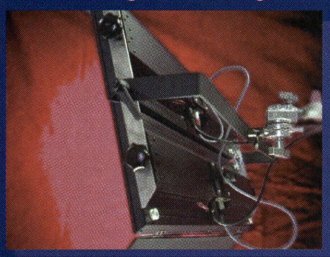

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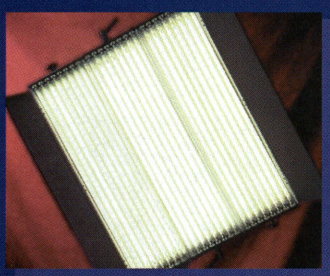

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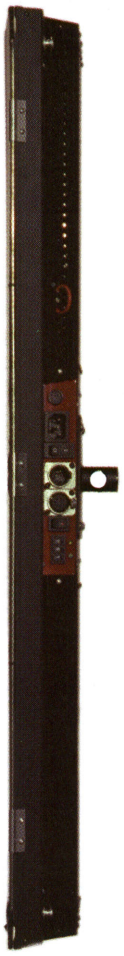

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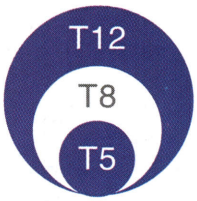

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Sundance '99: A Cooler Climate

While slightly less frenzied on the business front, this year's festival still offered a slew of fascinating films.

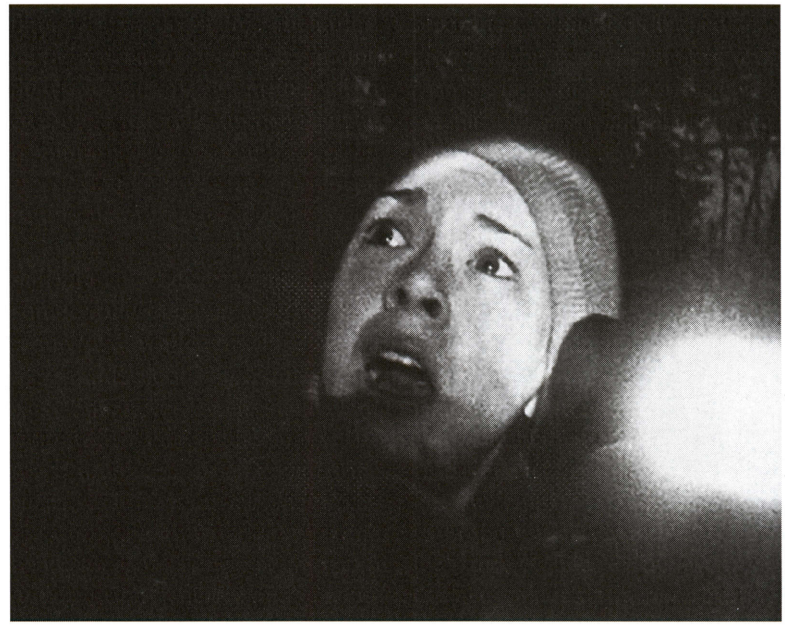
by Stephen Pizzello, Andrew O. Thompson, Patricia Thomson and Holly Willis

Overhearing the intercom at Salt Lake City's airport squawk "Will Julie Delpy please come to the information desk" is a pretty sure sign that you've arrived at the Sundance Film Festival. If that's not enough of a wake-up call, try an hour-long shuttle ride to Park City seated next to a beleaguered Hollywood agent barking into a cell phone.

If previous festivals are an accurate barometer, Sundance '99 was a bit quieter on the buzz front. The biggest sale was the acquisition of the popular comedy *Happy, Texas* by Miramax Films, for a reported total sum of $10 million. Audiences also championed the blood-curdling terrors of *The Blair Witch Project* (see capsule on facing page), which was one of the first flicks acquired off the auction block — for a cool $1 million-plus shelled out by Artisans Entertainment. Fine Line soon followed suit, picking up the boy-meets-boy farce *Trick* for a mid-six-figure sum, and then grabbing *Tumbleweeds*, a tale of renewal among a divorcee and her daughter, for almost double that price. Meanwhile, the documentary *American Movie* found a home at Sony Pictures Classics for $800,000, and won 15 minutes of fame for its subject, a struggling no-budget director named Mark Borchardt.

As always, overcrowded screenings were the order of the day. At the small Holiday Village Cinema triplex, a throng of viewers nearly trampled actor Ben Affleck and others while attempting to bum-rush their way into the premiere of the Hughes Brothers' documentary *American Pimp* (which featured an in-house appearance by Rosebudd, a major domo of the "escort" set). The anarchic spectacle, which brought to mind the Who's ill-fated Cincinnati concert in the mid-1970s, nearly prompted festival officials to call in Park City's finest to enforce some much-needed crowd-control. Voyeurs also flocked to *Sex: The Annabel Chong Story*, which documents the feminist graduate student/porno star's infamous attempts to stretch the limits of unsafe sex.

Boosted by the resounding critical success of the Brazilian film *Central Station* (a Sundance '98 World Cinema entry), the festival's international/foreign-language category boasted a number of excellent entries, including *La Ciudad*, a realistic black-and-white look at impoverished émigrés struggling for survival in New York City; *Run Lola Run*, an ultra-energetic German entry about a woman in a 20-minute race to save



Photos courtesy of Haxan Films.

Opposite page: Stranded in the woods of rural Maryland, collegiate documentarian Heather Donahue feels the clammy grip of terror in the cinema vérité fright flick *The Blair Witch Project,* one of the breakout films from this year's Sundance Festival. Left: Sans map, Donahue's fellow filmmakers, Josh Leonard and Michael Williams, ponder their predicament.

her boyfriend from mobster retaliation; and *Lovers of the Arctic Circle,* a lyrical Spanish tale of two lifelong friends' love for each other. The festival's most feted film, *Three Seasons* (see full coverage in *AC* Feb. '99) also painted a portrait of distant shores. Vietnamese-American director Tony Bui's saw his poetic, three-part picture score a festival first by taking a trio of major awards: the Grand Jury Prize, the Audience Award, and Best Cinematography honors for director of photography Lisa Rinzler's nuanced work.

Throughout the 10-day festival, *AC*'s merry band of moviegoers managed to take in close to 50 motion pictures. After careful consideration, our Sundance team opted to profile the following films, all of which offered intriguing visual styles.

— Andrew O. Thompson

The Blair Witch Project (U.S.)
Directors: Daniel Myrick and Eduardo Sanchez
Cinematographer: Neal Fredericks

A primal frightfest shot on a shoestring budget, *The Blair Witch Project* was one of this year's must-see Sundance entries. After a debut screening that generated wildly enthusiastic word-of-mouth and a distribution deal with Artisans Entertainment (which picked up Darren Aronofsky's equally inventive π (*Pi)* at last year's festival), *Blair Witch* became Park City's toughest ticket. Those lucky enough to score a seat were promptly treated to a truly harrowing film that does for camping trips what *Psycho* did for hot showers.

The tale's premise is deceptively simple. As the picture begins, a somber title card provides the backstory: in October of 1994, college students and budding documentarians Heather Donahue, Joshua Leonard and Michael Williams (played in the film by actors who just *happen* to have the same names) headed off to Burkittsville, Maryland to interview the townsfolk about the 200-year-old legend of the Blair Witch. After continuing on into the Black Hills Forest to capture footage of key historical sites for their class project, the three vanished without a trace, never to be heard from again. However, as the title card tells us, the trio's Hi-8 video and 16mm footage was found a year later, along with digital audiotapes and Donahue's journal.

What follows onscreen is a cinema vérité nightmare that documents the friends' final days, as they lose their way in the woods and are subjected to an array of increasingly ominous supernatural events. The group's tenuous personal bond is tested repeatedly over a series of terrifying nights, as they are tormented by eerie aural phenomena, the mysterious appearance of paranormal portents, and their own agonized imaginations.

The most remarkable aspect of *The Blair Witch Project* is that is manages to raise gooseflesh without ever resorting to the horror genre's predictably lurid clichés — i.e. gratuitous blood and gore. According to the film's co-writers and co-directors, Dan Myrick and Eduardo Sanchez, the primary goal was to avoid the literal while crafting an atmosphere of bone-chilling dread. "Ed and I went to film school together at the University of Central Florida, and we always enjoyed psychological horror films like *The Shining* and *The Exorcist,*" says Myrick. "We found out through brainstorming discussions that we were also both fans of the old TV series *In Search Of,* and creepy quasi-documentaries like *The Legend of Boggy Creek.* We loved those old grainy shots of the Loch Ness monster, or the shaky camerawork on Bigfoot moving through the woods, and we decided that we wanted to do a horror film that seemed 100 percent real."

The duo attained that goal via decidedly unconventional strategies that were based partly on producer Greg Hale's training in the U.S. Army's Special Forces. Working with cinematographer Neal Fredericks (*Dreamers*), Myrick and Sanchez designed a "method filmmaking" plan that would immerse the actors in the story's reality. The three thespians were given a two-day crash-course on how to operate the production's Hi-8 and 16mm film cameras, and then turned loose to capture their experiences in real time over eight days. During the shoot, the trio made their way to various predetermined points, encountering planted actors (and unplanted civil-

ians) with whom they would then act out improvisational scenes based on notes passed to them by the directors and cinematographer. Once the actors entered the forests of Maryland's Seneca Creek State Park, they used Global Positioning System (GPS) handsets to navigate the terrain; the production team tracked the players via GPS or simply stalked them through the woods to observe their movements. Directorial notes, extra camping and film gear and food were left in milk crates marked with day-glo orange bicycle flags. Sanchez explains, "Dan and I provided detailed outlines with all of the events that would happen to the actors on each day — from eating breakfast to being chased out of their tent — and the time of day when the events should take place."

To push the actors even further into their roles, the production team would creep up to the perimeter of their campsite each night and harass them with frightening sounds and other morbid surprises. This gleefully sadistic exercise continued during the daytime, as the actors were required to cover more and more ground with less and less food. "It was like extreme theater in the outdoors," Williams attests. "From an acting standpoint, it was a great challenge, because we didn't have any contact with our directors. We just had to hope that performance-wise, we were going where they wanted us to go. After a few days, we were really able to turn the freedom they'd given us into an advantage, and take any risks that we wanted. It was an actor's dream, and the more we immersed ourselves in the characters, the scarier things got. At the end of each day, we would ask ourselves, 'Okay, what's going to happen to us tonight?'"

With a wry grin, Donahue adds, "We always knew that we were safe, because everything was so well thought-out and planned, but it was still a freaky experience. Every time we turned around, we were hearing the cries of dead children or finding voodoo symbols hanging from the trees!"

The project was also a unique experience for director of photography Fredericks. Since actors Logan and Donahue shot most of the footage, Fredericks worked more as a supervising cameraman, offering the duo technical tips via written notes left in the woods. "As a cinematographer, you want to have as much control over the imagery as you can, but on *Blair Witch* that objective became rather difficult," he says. "We did allow ourselves to control certain aspects of the shoot, however. For example, the 16mm night footage that Joshua shot [on Kodak's 200 ASA 7222 black-and-white stock] was pushed two stops in the lab to give it a grainy, rough, student-film look. Also, the light we gave him to attach to the CP-16 camera was a 750-watt ENG fixture that Ed and I

SUNDANCE AWARD WINNERS

Grand Jury Prize:
Three Seasons (drama), produced by Jason Kliot, Joana Vicente and Tony Bui, and directed by Tony Bui; and *American Movie* (documentary), produced by Sarah Price and Jim McKay, and directed by Chris Smith.

Cinematography:
Three Seasons (drama), Lisa Rinzler; *Rabbit in the Moon* and *Regret to Inform* (documentary), Emiko Mori.

Filmmakers Trophy:
Tumbleweeds (drama), Gavin O'Connor; *Sing Faster: The Stagehands Ring Cycle* (documentary), Jon Else.

Directing Award:
Judy Berlin (drama), Eric Mendelsohn; *Regret to Inform* (documentary), Barbara Sonnenborn.

Waldo Salt Screenwriting Award:
Guinevere, Audrey Wells, and *Joe the King*, Frank Whaley.

Audience Award:
Three Seasons (drama), produced by Jason Kliot, Joana Vicente and Tony Bui, and directed by Tony Bui; *Run Lola Run* (world cinema), produced by Stefan Arndt and directed by Tom Tykwer (Germany), and *Train de Vie*, produced by Frédérique Dumas and Ludi Boeker, and directed by Radu Mihaileanu (France); *Genghis Blues* (documentary), produced by Roko Belic and Adrian Belic, and directed by Roko Belic.

Freedom of Expression Award:
The Black Press — Soldiers without Swords, produced and directed by Stanley Nelson.

Special Jury Prize:
Steve Zahn (comedic performance), *Happy, Texas;* Scott King (distinctive vision in filmmaking), *Treasure Island*

Latin American Cinema Award:
Santitos (Mexico), produced by Alejandro Springall and Claudia Florescano, and directed by Alejandro Springall; *Life Is to Whistle* (Cuba), produced by Camilo Vives and directed by Fernando Perez.

Short Filmmaking Award:
More, directed by Mark Osborne.

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had previously tested to be sure that the spread would only extend a certain number of feet. We wanted the nighttime scenes to fall off into blackness so the audience would have to wonder what was out there beyond the range of the light. Most of the action was off-camera or away from the light, and everything was staged in conjunction with a variety of sound effects to create a scary atmosphere.

"Heather shot most of the video footage, which was designed to provide a more immediate, you-are-there feel for their day-to-day, behind-the-scenes experiences on this fictional class project. I've had some experience transferring video to film, so I knew that when we eventually transferred all of the footage to a 35mm print, the aesthetic qualities of the 35mm film would take some of the edge off the video, making it a bit softer and more pleasing to the eye."

Though Logan did have some prior experience as a freelance photographer and videographer, he had never worked with a CP-16 before. He says that serving double duty as an actor and cameraman on *Blair Witch* proved to be a valuable lesson, and a physically and psychologically daunting one at that. "The CP-16 is a very cumbersome camera, and we were already loaded down with backpacks and everything else. Neal had explained the aesthetic that we were going for, though, and I think that began to come through subconsciously as I shot the footage — even though I was concentrating on my performance as well. As an actor, you don't get such an opportunity very often, and it was interesting to try to maintain that balance. The fact that we were shooting in sequence really enabled us, as an acting unit, to live in the moment. We got very tired and very hungry, and our nerves were constantly on edge. As the filmmaking process went on, there was less and less need to pretend. Everything got very raw, and I think that comes across on the screen."

The film's enigmatic ending leaves the ultimate fate of its characters in limbo, but those who thirst for insights are encouraged to hunt for clues on the production team's website (www.haxan.com), which offers excerpts from Donahue's fictional diary. Assessing the picture's refusal to pander to viewers' preconditioned reflexes, Logan concludes, "I think audiences have really become conditioned to seeing violence and blood onscreen. It's all been done before, so it worked to our advantage to play on the psychological element and let the viewers use their imaginations to create their own vision of the Blair Witch. If you show the boogeyman, it becomes a cliché, and the film then falls into the same category as any other horror film ever made. That's not the kind of payoff we were looking for."

— S. Pizzello

The Loss of Sexual Innocence
(Great Britain)
Director: Mike Figgis
Cinematographer:
Benoît Delhomme, AFC

Directing from his own 17-year-old script, British filmmaker Mike Figgis launched *The Loss of Sexual Innocence,* which offers a non-linear look at the life experiences of Nic (Julian Sands), a documentary filmmaker on assignment in the arid outpost of Tunisia. Intercut with images drawn from the "fall from paradise" myth, this $3 million film explores Nic's recollections of his various sexual awakenings: as a boy in colonial Kenya observing his grandfather's bizarre, Bible-reading ritual with a native girl clad only in lingerie; as a young teen engaging in a postpubescent tryst with his girlfriend; and as an adult holed up in a country abode, where he hopes to enjoy a weekend's worth of sensual

Photos by Mike Figgis, courtesy of Sony Pictures Classics.

Documentary moviemaker Nic (Julian Sands) enjoys a sultry liaison with his wife (Johanna Torel) in Mike Figgis's experimental picture *The Loss of Sexual Innocence.*

delights with his wife.

The film itself is structured as a series of short and uniquely visual vignettes shot on location in Tunisia's Sahara Desert, northern England, and the Italian areas of Umbria and Rome. Figgis had been quite taken with the collage of lighting styles and handheld camera moves on display in Tran Anh Hung's *Cyclo* (see *AC* Aug. '96), so he enlisted that film's cinematographer, Frenchman Benoît Delhomme, AFC, whose other credits include *When the Cat's Away*, *The Scent of Green Papaya*, *Artemesia* and *The Winslow Boy* (covered in Points East, *AC* Feb.'99). "Mike loves to find symbolic colors for different sequences, and to push the meaning of some sequences with just color and lighting," affirms Delhomme. "He wanted lots of handheld camera — no grips and no sticks. In watching *Cyclo*, he saw the exact style that he wanted [for *Sexual Innocence*], so our conversations with one another [during preproduction] went quite smoothly." After trying out various stocks and exposures, Delhomme and Figgis resolved to shoot the film's stranger sequences on Kodak's 16mm reversal Ektachrome stocks, and then subject the footage to cross-processing (see "Soup du Jour," *AC* Nov. '98).

Prior to *Sexual Innocence*, Delhomme had worked with cross-processing only on a commercial shoot, but that situation was somewhat different since the end result was colored on telecine. To prepare for any eventuality, he and Figgis tested the Ektachrome stocks' latitude by underexposing and overexposing it in one-stop increments. Aside from having to deal with reversal's erratic nature, issues of contrasting skin tones were also a consideration for the film's "Garden of Eden" sequences. Delhomme photographed these naturally-lit daytime exteriors on both the 125 ASA 7240 and the 400 ASA 7251, in the rural areas of Umbria, Italy.

In the Garden of Eden, Adam (Femi Ogumbanjo) and Eve (Hannae Klintoe) toy with temptation. French cameraman Benoît Delhomme, AFC, photographed this vision of "paradise" on 16mm reversal stock in Umbria, Italy. Cross-processing lent the completed sequence a lustrous amber tone.

"Since Adam was black and Eve was white, the results were fantastic," says Delhomme. "When underexposing, Adam would completely disappear in the frame, while Eve was still there. While overexposing, Eve became completely transparent while Adam remained within the frame."

In these trips to "Paradise," the cross-processed results resonate with an almost painterly, glowing golden tone. "You tend to have a very strong yellow element when working with cross-processing," adds Delhomme. "I thought that this could become problematic, but Mike said, 'I *want* it to be golden, almost like a Renaissance painting.' While grading the film, I tried to highlight its golden-reddish attributes."

Despite initial trepidation, Delhomme more or less made peace with the fact that shooting on the unpredictable Ektachrome would be an exercise in perseverance. He did, however, find the use of reversal to be extremely nerve-racking in a peculiar dream sequence that evokes the surreal settings of David Lynch's *Twin Peaks* and Ingmar Bergman's *Wild Strawberries*. Since this extremely contrasty fantasy would be shot in one day, Delhomme implored Figgis to let him film it on both reversal and the Vision 200T 7274. The reverie was filmed in real time in an actual theater space, which production designers Jessica Worrell and Mark Long utilized to construct a set sectioned into four pieces. The theater was already fitted with multiple 1K Par 64s and some older 2K and 5K Fresnels. Delhomme heavily gelled these fixtures in shades of red and yellow, while gaffer John Higgins operated them via a preprogrammed dimmer board that synchronized the lamps to the actors' movements.

The vision starts off in a yellow hue as Nic and his wife (Johanna Torrel) lie in bed. She levitates off the mattress, which is in a vertical position, and floats by a black backdrop with a full moon (in reality, a Translight backing). Then she crosses a theater curtain to end up in a kitchen, where she begins pressing some clothes. "I just tried to go very harsh and natural with the type of poor kitchen lighting that you would find in old, neorealistic Italian films," Delhomme says. "Afterwards, she opens the door and enters this [very contrasty] jazz club. At that moment, we mixed in red and yellow, and I played around with the keyboard controls. In the end, she finishes by making love to a black man on a bed

[in the corner, as the musicians continue playing in the foreground]. I put the bed in complete darkness and placed the light [an ungelled 5K Fresnel] on the edge of the bed. Then at the end of the shot, [after the light is activated], this new space suddenly appears out of the dark. When you're dreaming, you sometimes don't know exactly where you are — in this case, it's both a bedroom and a nightclub. We wanted to take that type confusion and push its limits."

Among the scenes shot on standard Kodak negative stocks, Delhomme managed to satiate his fondness for combining fixtures of contrasting color temperatures, particularly during an nocturnal episode in which the adolescent Nic (Jonathan Rhys-Meyers) tries to put the make on his girlfriend, Susan (Kelly McDonald) in her parents' home. "I didn't want those night scenes to be too realistic, because as teenagers, the characters are still in a hopeful stage of life," Delhomme expounds. "I wanted to create a universe inside the house [shot on 7274] that was more poetic than normal — a 'poetic streetlamp effect,' if you will. I imagine that a house like this in Newcastle [England] would have weak street lamps with a dirty sodium look. But I happen to love aquatic blue-green [a shade representative of a mercury-vapor fixture] because it reminds me of water, and it gives off the feeling that [this room] is an aquarium. Outside, I worked with 12K Arri HMIs gelled with ½ CTO and some plus-green gels; [while filming inside the living room,] I nearly went to full plus-green.

"Since *Cyclo*, I've become very good at mixing different color temperatures within the same shot. For [master shots of] the kitchen, I mixed HMIs coming from outside [a 2.5K and 1.2K Par, both gelled with ½ CTO and ½ plus-green] with daylight fluorescent tubes inside. When I came inside the kitchen, I also mixed the temperatures of fluorescent tubes. On *Cyclo*, I discovered that using full daylight tubes with a normal tungsten stock and no filter doesn't produce a blue as deep as you'd imagine it to be, but it does give a very nice cold shade."

As he had done on his previous picture, *Leaving Las Vegas* (*AC* Feb. '96), Figgis sought to exploit the Super 16 format. "For Mike, it's more a matter of style than of economics," explains Delhomme. "He loves the texture [of Super 16 blown up to 35mm], as well as the idea of the camera being so small that you can work handheld with a zoom lens and be free [with your movements]." Figgis also operated B-camera himself throughout the five weeks of filming. Both cameramen utilized an Aaton XTR-Prod with a Microforce remote as a handgrip. Their primary lenses were Canon 8-64mm and 11-165mm zooms. Canon's 300-600mm came into play when Figgis sought to indulge his long-lens fetish. A set of Zeiss Superspeed prime lenses were also implemented during night shooting.

To track the dream sequences in a smooth, Steadicam-like style, Delhomme had the A-camera fitted with remote focus and iris motors. *The Loss of Sexual Innocence* involved a lot of on-set improvisation, and in such instances Delhomme and Figgis would roam through a scene for several minutes in search of the right moment. "Mike wanted to create choreography between the cameras," the cinematographer notes. "I was shooting my point of view of the sequence at the same time that he was shooting his. I think he wanted to mix the two [perspectives] to get something richer. We were like two cameramen in competition on the same set, trying to give the director the best shot possible. Mike's position as director/cameraman allowed him to be more 'rough,' especially when he wanted the film to have a documentary-type reality [as in desert scenes of Tunisian nomads decorated in flowing blue robes and indigo face paint]. Sometimes, Mike would suddenly move his camera very close to the actors, nearly casting a shadow on them, so I always kept my left eye open [during improv scenes] to check where he was, and get the best coverage. Mike wanted to shoot quickly and not have anything be too perfect — it might seem perverse, but that was the rule of the film."

Overall, Delhomme relished the ability to take liberties with the laws of filmmaking during his unusual working relationship with Figgis. "When you say to yourself, 'Well, I will use this reversal stock with all of its qualities and try to push the limits,' of course you become somewhat scared,' Delhomme admits. "It was a challenge, but I'm really glad to have done *The Loss of Sexual Innocence,* because it changed my perception of lighting. Mike was not obsessed with making beautiful imagery — he wanted something fresh and strong, and he didn't care if shadows were too dark. Personally, I think that this will be one of the few times in my life that I'll be able to do such cinematography."

— A. Thompson

Rabbit in the Moon
Director: Emiko Omori
Cinematographers: Emiko Omori and Witt Monts

In a break with Sundance tradition, the award for Best Documentary Cinematography went to Emiko Omori for two separate competition entries, both of which were shot on video: *Regret to Inform*, Barbara Sonneborn's haunting first-person account of Vietnam war widows, and Omori's own film, *Rabbit in the Moon*, a historical survey and personal essay on the Japanese internment camps during World War II, where she and her sister (and co-producer) Chizuko Omori spent

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their formative years.

Like many longtime documentary cinematographers, Omori has had considerable experience working with film — in fact, she's been doing so since 1968, when she began her career as San Francisco's first female news cameraperson. "I love film, but in the past few years my work has been mostly shot on video — we can't afford film anymore," says the Bay Area documentarian, adding, "I'm now begrudgingly saying that video is getting pretty darn good."

An upgrade in quality is certainly evident when Omori is handling the camera. Using a Sony 400A BetaSP camcorder with a Canon J14aX8.5B IRS broadcast-grade lens (8.5-120mm), she deliberately brought a filmic sensibility to both documentaries.

Photo courtesy of Sun Fountain Productions.

San Francisco-based director/cinematographer Emiko Omori displays a family snapshot taken during World War II in a scene from her documentary *Rabbit in the Moon*. Omori won the Sundance Festival's Best Cinematography prize for her photography on both *Rabbit* and Barbara Sonneborn's *Regret to Inform*.

Omori describes herself as a "conservative" cinematographer — a comment that Sundance juror Michel Negroponte echoes in somewhat different terms: "One of the things I find very interesting about the work in general is the spareness of it," he says. "It's very simple and understated — in a way, very Zen. It reminds me of the work of [Japanese filmmaker Yasujiro] Ozu — everything is done with great care and deliberation and balance."

Indeed, there's no flashy photography in either *Regret to Inform* or *Rabbit in the Moon*. The cinematography in both films exudes a calm and exquisite beauty — a necessary antidote, perhaps, to the emotionally wrenching stories that unfold in each film. There are slow pans across vivid green rice paddies and purple-hazed Rocky Mountain landscapes, and close-ups of telling details: a knotted hemp rope that binds an oar; Japanese script carved in a boulder; and broken dinner plates still sparkling under the sun in a desolate desert landscape. "There's an odd kind of contradiction going on," says Omori of her landscape shots. "You want the film to be beautiful, yet you don't want it to be like a postcard. You want it to have emotional content and character."

What truly distinguishes Omori's cinematography is not the equipment she uses — her tools are quite minimal — but rather the time and care she takes in crafting shots. "For me, setups for interviews are very important, and I probably drive directors crazy," she admits with a laugh." "I do spend some time looking for that ideal setup."

Since both *Regret to Inform* and *Rabbit in the Moon* have long passages of voice-over recollections, Omori found slow panning shots to be stylistically appropriate. "Most news shows can't use those types of moves," she notes. "They'd have to truncate them or cut them up."

On a technical level, Omori's prolonged search for the proper setup was a particularly critical issue in Vietnam, where limited electricity compelled the crew to stick largely with existing light supplemented by a reflector. In the U.S., she and *Rabbit* co-cinematographer Witt Monts would easily spend an hour and a half poking around the subject's house looking for the right spot and then lighting the scene.

In terms of illumination, the duo came to rely on Chimera lightbanks, which arrived on the market shortly after *Rabbit* began shooting in the early Nineties. "It creates a beautiful soft light that wraps around a person's face," says Omori, who's fond of the control that the fixture allows. "You can put pretty low wattages in it and get close to people, and not be afraid of blowing them out." Omori tends to side-light her subjects, but in general, she notes, "I've tried to keep my contrast a little more built-up, with a greater light-to-dark ratio. However, I've noticed in transferring video to film that I'm better off if I'm not quite so extreme." To lend the images in *Rabbit* a slightly softened quality, the filmmakers also used a light-grade Tiffen Black ProMist filter, which, according to Monts, "doesn't jump out at you, but provides a more elegant look."

The same delicate care was taken with the exterior scenes. "I think we spent more time on the visuals than we did collecting the interview material, which is pretty unusual on a documentary," says Monts. "We worked long and hard to achieve Emiko's vision of the way the project was going to look." Within the documentary form, it's typical that "you're chasing the story. You're concentrating on the people and the content. In the case of *Rabbit*, situations aren't happening fast right in front of you." With the luxury of time and the ability to be her own boss, Omori could experiment with a number of new tools and approaches.

Admits Omori, "I always had the fantasy of shooting in the great light at the beginning and end of the day, and taking a nap in the middle of the day. I finally did that on my own shoot!" The crew would rise at 4 a.m., shoot until 7 or 8, have breakfast, and then take a nap. At midday, they'd get up again, scout locations, and shoot in the late afternoon. The result is a beautiful raking light in many locations, and richly hued sunrises.

Omori also took the time to

test filters while filming in the desert areas that were once the site of wartime internment camps. "I tried out filters that I'd been carrying around for years and never had a chance to try," says the documentarian. Though these filters could be considered basic — mostly NDs and various colors — they could enrich a sky, darken a foreground, or enhance a sunset. And given such poignant subject matter, slight subtleties in scenery could weigh heavily on the emotional meter.

Photos courtesy of DVC Entertainment.

Displaying her self-inflicted scars, the confused Evie Decker (Lili Taylor) contemplates her future in *A Slipping-Down Life*.

"Video has had a kind of liberating effect on me," Omori admits. "Because I have longer loads in the camera, I can afford to gather images; I can anticipate something's going to happen, start rolling, and wait. You don't feel like you've burned up money." Besides the economic advantages, the leisurely pace of videography is one well-suited to Omori's artistic aesthetic. "I'm one of those people who is always looking through the camera. I collect images — I've just done that all my life."

— P. Thomson

A Slipping-Down Life
Director: Toni Kalem
Cinematographer: Michael Barrow

Subtlety was the primary goal in the visual design of *A Slipping-Down Life*. The look of the film was devised by writer/director Toni Kalem and veteran cinematographer Michael Barrow, a New York-based industry veteran whose credits include the TV series *The Days and Nights of Molly Dodd* and HBO's *Sex and the City*, as well as the features *Me and Veronica, Heavy, Caught, Whatever* and *Sunday* (see Production Slate, *AC* Sept. '97). Even though it was made with a mandate eschewing fancy camera moves, eye-catching compositions and attention-grabbing colors, the film remains downright beautiful, with a gentleness that deftly underscores its moving theme of self-definition and discovery.

Drawn from Ann Tyler's novel of the same name, *A Slipping-Down Life* contemplates the world of Evie Decker (Lili Taylor), a young woman who cheers up children at a local amusement park by wearing a theme park-type animal costume. Evie's mundane life takes an upswing one night when she hears the radio rantings of Drumstring Casey (Guy Pearce), a brooding, poet/guitarist who fancies himself a modern day Jim Morrison. Magnetized by Casey's mysterious charm, Evie tracks him down to a local dive bar where he gigs with his band. In a deranged moment of self-direction designed to get the guitarist's attention, Evie carves his name into her forehead. Their paths cross again when Casey's manager/drummer, David Elliot (John Hawks), finesses a photo shoot between the two as a publicity stunt, which results in a volatile love affair.

Director Kalem is an accomplished actress who always focuses on actors and narrative while working behind the camera; all decisions regarding the movie's look stem from

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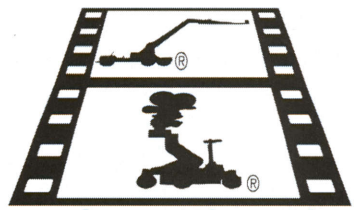
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Under her father's concerned yet loving gaze, a renewed Evie fixes her hair to conceal her disfigured forehead.

how the camera can further the storytelling. *A Slipping-Down Life* deals with the way in which Evie sees herself, and how that perception evolves over the course of the story. Thus, it seems only fitting that some of the director's initial inspirations were drawn from photographer Nan Goldin's book *I'll Be Your Mirror.* "There are many mirror shots in the film," says Kalem. "I was very interested in what Nan Goldin did with reflections, and the idea of looking at yourself. Evie sees herself backwards, or in a distorted way, but at the end of the story, she sees herself in the right way."

Cameraman Barrow, who wielded an Arriflex 535 with an Aaton 35-III for backup, followed the action with the camera rather than having the actors follow the camera. "Because I've worked as a gaffer for so many years, I'm the type of cinematographer who goes into a set watching the director and actors to see where they want to be," he explains. "I don't try to steer people to the perfect frame — my frames take on a naturalistic look, almost like a snapshot. There's a place that seems best for the camera to tell the story, and I try to work with the director to find that place."

After seeing Barrow's work in Robert Young's critically acclaimed *Caught,* Kalem knew that she had found a cinematographer with talent. The director also advocated a following-the-action aesthetic, and while observing Barrow at work in this manner, she began to admire his sensitivity. "He knows where the emotional life of a scene is," observes Kalem. "Besides being terrifically talented, he's a very sensitive person. I've seen women directors — especially first-timers — get onto sets with male cinematographers and be run roughshod over. I was wary of that happening, but Michael likes women, and he was wonderful to work with."

One of the movie's most striking features is the kaleidoscopic palette of colors dotting its rural landscape. "At the beginning of the film, I wanted a much more desaturated look in terms of the colors," the director says. "When Evie cuts her forehead and sees that brilliant red blood, I saw it as the moment when color literally comes into her life — she goes from black-and-white to color."

While Barrow and Kalem didn't adhere precisely to this notion, they did use a progression of color shades to reflect the arc of the story. Many of the film's loveliest shots take place in the evening, when soft pools of colored light accent the darkened ambiance, especially on the porch at the home of Evie's father. The interiors are similarly striking and often feature deep hues in the background. "Almost every location was painted or wallpapered," says Barrow, who utilized Kodak EXR 5298 for interiors and EXR 5245 for exteriors. "I would sometimes use a coral or tobacco filter outside to play with the colors a bit, but I had to be careful not to over-filter so I'd have the latitude to pull back if I needed to. I tended to use Mitchell filters for close-ups, usually an A or B with an ⅛ ProMist for softening, as well as grads for different times of day."

Of the film's several night scenes, one of the most visually interesting is an argument between Casey and Evie that occurs outside a roadhouse. Camera operator David McGill caught the scene with his Steadicam, nicely emphasizing the instability and distance between the two lovers. (McGill executed all of the Steadicam work, while Barrow captured the handheld scenes.) Barrow also had a 160' Condor at his disposal for night scenes.

Barrow was also able to cut loose with the camera during concert footage of Casey's group jamming out their hard tunes in a Southern-style roadhouse shack. "I was wary of how badly that type of scene is usually done," says Kalem. "Musical sequences always end up looking like MTV videos or fake clubs, but I wanted ours to as realistic as possible. We looked at a lot of concert documentaries, and talked a lot about telling the story largely from Evie's point of view. Then I just let Michael go. He had two cameras, sometimes three, and shot with cranes, handheld, or with the Steadicam, and the footage turned out great."

Despite the extreme Texas-summer temperatures (never under 103°F), a tight budget, and an ambitious shooting schedule spread out over 30 days, *A Slipping-Down Life* offers an aesthetic that gently accents its story, while still permitting the pleasure of pretty pictures.

— H. Willis

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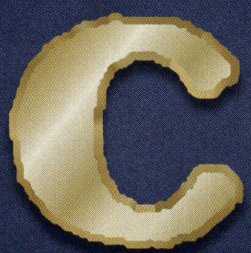

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Sundance '99: A Cooler Climate

Top: Coach Harry Keitt observes his trainees in action at the Bedford-Stuyvesant Boxing Center in the documentary *On the Ropes,* which earned a Special Jury Prize at Sundance. Bottom: Fists flying, a pair of amateur fighters display some fancy footwork. Co-directors Brett Morgan and Nanette Burstein found it quite a challenge to capture close-ups of the fleet-footed pugilists.

On the Ropes
Directors: Nanette Burstein and Brett Morgan
Cinematographer: Brett Morgan

While shooting the boxing documentary *On the Ropes,* Brett Morgan had to learn how to roll with the punches — literally. "During sparring, I would bring the camera into the ring," he recalls. "I got punched on a number of occasions, which I didn't mind. They'd stop and say 'Sorry,' but I wanted to get that intimate feeling during the fights. Otherwise, we'd have just been outsiders looking in."

As trainees in the New Bedford-Stuyvesant Boxing Center, Morgan and co-director/co-producer Nanette Burstein were anything but outsiders. A 103-pound "flyweight," Burstein had trained for a year with coach Harry Keitt before deciding to film inside the Brooklyn neighborhood gym. *On the Ropes* focuses on Morgan and three fellow boxers, as each member of the latter trio face personal turning points: one is heading towards the professional leagues; another faces a jail sentence; and the third weighs the importance of school versus the street. Warmly received, the film picked up a special jury prize — quite a feat for a New York University film school project. (Morgan and Burstein are not novices, however; both have worked with noted documentarian Barbara Kopple, among other pros.)

Like many documentaries presented at Sundance, Morgan shot on video. For most of the film, he employed a Sony 537A BetaSP camera outfitted with a Fujinon 10-120mm zoom lens; a few early scenes were captured on a Sony Hi-8 VX3 3-chip consumer camcorder. Morgan managed to work with just one light — a 1K Lowel Rifa-Light LC88 — bouncing its spread off a wall for a handful of interviews. "Early on, Nanette and I made an aesthetic decision to always to try to use natural light, because as a cinematographer I feel that lighting for video looks very glossy and stagy, and we really wanted that natural ambiance," Morgan explains. "I'd never point [the light] directly at the subjects. I never backlit them, either, because I thought that would create too much artifice. We really wanted all of the interviews — and the entire film — to have a very natural feel, which we felt would give it a filmic sort of look."

Morgan notes that it was especially challenging to shoot close-ups of fighters in perpetual motion, amid flurries of punches — easily 850 per fight. "The fighters don't stay in the same place for more than two or three seconds, and you have to rack-focus and zoom at the same time," he notes.

Such fast and fluttering movement is also a problem in most tape-to-film transfers, but the filmmakers brought their work to Swiss Effects, a small company based in Zurich, Switzerland, that pulled off the job with minimal grain and without a trace of motion blur. Run by a group of cinematographers, the filmmaker-friendly company is constantly testing improvements in transfer techniques. In the end, *On the Ropes* was output onto Kodak's 50 ASA EXR 5245 daylight stock, creating a film negative from which prints were struck. "Certain scenes were shot at night, and if I had shot them on film, [Swiss Effects] would have had to use EXR 5298, adding a lot of grain. You can shoot on video, keep your blacks black, blow up on 45, and have no grain whatsoever."

Morgan also had to deal with the flickering fluorescent lighting

Photos courtesy of Fox Lorber.

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characteristic of boxing venues. "The gym was really difficult, because we had a mixture of tungsten, fluorescents, and daylight coming in." He performed extensive camera tests to figure out the space's proper white balance. Utilizing normal balancing techniques using a white card, Morgan would end up with a troubling greenish hue. "A camera guy once told me this secret trick, where you can actually white-balance off the light itself," he offers. "You point the camera into the light, stop down to the bottom, and get the white balance off the fluorescents. That would turn the green into white light."

While planning their approach to the boxing tournaments, the filmmakers turned to such classics as *Rocky* and *Raging Bull*. These films, however, only served to frustrate the pair. With its striking POV shots inside the ring, Martin Scorsese's *Raging Bull* (shot by Michael Chapman, ASC) has tremendous power, but the film's action was carefully choreographed on a soundstage; having a fist fly at the lens in an uncontrolled setting is an entirely different matter. Says Morgan. "You can never create that look [in real life]. However, we *could* create the same type of sound." The filmmakers therefore devoted a good deal of their postproduction budget to meticulous sound design: they did foley effects of every punch and grunt, of feet skimming across the ring's surface, and of bodies hitting the ropes.

The ideas provided by *Rocky* (shot by James Crabe, ASC) proved to be a total disaster, however. Having watched the film the night before a big fight, the low-budget documentary crew was psyched up — and overly ambitious. "We were thinking, 'We need 10 cameras on this shoot!'" Burstein recalls with a laugh. "But we didn't have any money, so we said, 'Okay, we'll borrow all of these Hi-8 cameras and ask our friends to shoot." They ended up with five cameras and a load of problems: unmatched white balance, stylistic inconsistencies, and glaring differences in resolution and grain between the Hi-8 and BetaSP footage. "It was almost impossible to cut within the scene with the BetaSP," says Morgan. "We realized that whatever advantage we had gained by using multiple cameras was defeated by the fact this [discrepancy] would jump out at you." In the end, all of the Hi-8 fight footage had to be scrapped.

As anyone who's ever been in the ring knows, you can't win them all. But ultimately, as their Sundance award for *On the Ropes* proves, Morgan and Burstein finished their fight with arms aloft.

— P. Thomson

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The Terrorist (India)
Director/Cinematographer:
Santosh Sivan, ISC

The 1991 assassination of Indian Prime Minister Rajiv Gandhi by a suicide bomber motivated director/cameraman Santosh Sivan, ISC, to explore the mindset of an individual whose political beliefs would lead to such a ruthless and brutal act of self-sacrifice. In *The Terrorist,* Sivan tracks the training of Malli (Ayesh Dharkar), a 19-year-old woman on a one-way journey to obliterate a visiting dignitary. Ever since her brother's death at the hands of an opposing political faction, Malli has maintained an unwavering commitment to her cause, to the point where she's denied herself any sort of emotional existence. While en route to her destructive destiny, however, the purposeful yet pensive Malli begins to wonder what's more important: her duty to her political group, or to herself. A favorite of the international festival circuit, this 95-minute, Tamil-language movie has been touring the global film beat, where it has earned various honors, including Best Film, Best Direction and Best Actress honors, as well as with a Jury Prize at last year's Cairo International Film Festival.

A native of Chennai, India, Sivan was born into the film business: his father ran Sivan Studios and made short documentaries on video. The younger Sivan went on to study cinematography at the renowned Film and Television Institute of India. Now an accomplished cameraman, Sivan has spent much of his career shooting the highly stylized, musical melodramas that comprise much of India's cinematic output. His expert imagery has made the cameraman a four-time winner

Santosh Sivan, ISC, the award-winning Indian director/cinematographer of *The Terrorist.*

of India's National Award (for the features *Perumthachan, Kaalapani* and *Iruvar,* and the documentary *Mohiniyattam*). Sivan has also had success as a director: his 1988 short *The Story of Tiblu* earned a National Award, while his first feature *Halo,* a Hindi-language movie for children, also captured one of the coveted prizes and earned other honors at Egyptian and Canadian film festivals.

With such a full resumé, it's only natural that Sivan would try to up the ante. "When I decided to direct *The Terrorist,* I thought that also being its cinematographer

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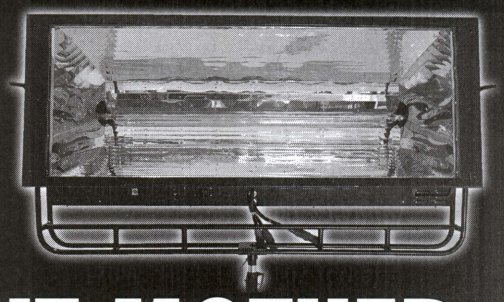

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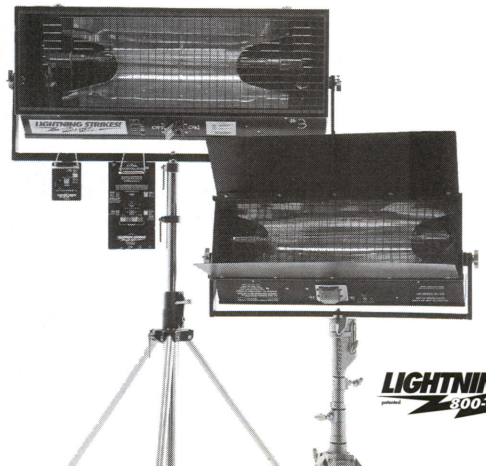

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Staunch revolutionary Malli (Ayesh Dharkar) sets her sights on the enemy while stationed in the teeming jungles of India.

Photos courtesy of Santosh Sivan, ISC.

would be a great advantage, just as if I had been its writer," says Sivan, a founding/executive member of the recently established Indian Society of Cinematographers. "[During the shoot,] there were times when I was very much in sync with my instincts as a director, as when I was incorporating elements of nature and going ahead with particular moments when it was raining."

One of Sivan's favorite cinematographers is fellow countryman Subroto Deb, who photographed a number of pictures for esteemed Indian filmmaker Satyajit Ray. Sivan particularly appreciates the timeless beauty of Deb's work in *Charulata* (*The Lonely Wife*), a 1964 period piece about Victorian-era India. On *The Terrorist,* Sivan took some cues from the paintings of Anjolie Ela Menon, but he also strove for sense of realism. Despite the fact that he shot the film on slow stocks (Kodak's 100 ASA EXR 5248 and Vision 200T 5274), he tried to work in natural light as much as possible, and employed "very simple lighting equipment — only a 2.5K HMI and about four small tungsten fixtures. I wanted *The Terrorist* to work in multiple layers, so I decided to make the film as if I were painting a picture."

Given Sivan's desire to delve into Malli's submerged psyche, he shot *The Terrorist* primarily in character-studying close-ups, using an Arri 35-III outfitted with a Zeiss 60mm T3 macro lens. "I thought that we should concentrate the camera primarily on her — like a mind probe — rather than trying to capture the grandeur of the place. I was very interested in understanding her face and treating it like a landscape. Most faces are very beautiful, if you try to see their inner beauty. I also like to use close-up lenses to enhance perspectives and give sound a different meaning — if you are [focusing] on a face, for example, you can really accentuate a person's breathing.

"I also wanted to explore water in close-ups," he continues. "I've always thought of a protagonist's mind as if it were water. [Depending on the individual's psychological state,] sometimes it is like a waterfall, at other times it's like the static surface of a pond, and sometimes it is merely a drop of liquid." Water images figure prominently throughout *The Terrorist:* Malli and her menacing comrades tote machine guns during a drenching downpour filmed from a dutch angle; in a tranquil moment, Malli cuts an enticing figure while disrobing before a cascading waterfall; and the young revolutionary is sometimes seen crossing a reflective river in colorful panoramas.

Maintaining this aquatic motif, many scenes boast a rich aquamarine ambiance. In one sequence, while resting at a compound, Malli hears the faint echoes of a baby crying. In search of the sound's source, she makes her way into an open courtyard surrounded by balustrades. The space is done up in an aquamarine tones, while hints of warm gold peep out from the surrounding room's windows. "We shot that sequence just after sunset, during 'magic hour,' with the natural light," Sivan notes. "In India, there are many such houses with open courtyards at the center which are lit by direct sunlight. For the interiors, we used [uncorrected] tungsten lamps."

Despite its emphasis on character, however, *The Terrorist* is as much a territorial journey as it is a personal one. While training to become a hardened assassin, Malli traverses the sumptuous countryside in and around Madras. At one point, she is accompanied by Lotus, a naive young boy who happens to be an expert tracker. In one particularly picturesque sequence, the pair sleep in an open patch of forest. The surrounding thicket is bathed in a greenish-blue hue, and the two travelers are lit from above by a glowing white beam of moonlight. "That was totally done day-for-night," Sivan reveals. "We shot it at a time when the sunlight would hit only the characters, leaving the rest [of the area] in shadow. We underexposed it by one and a half stops — photographing it *without* an 85 filter — and filled up [the surrounding area] with huge white scrims [to sculpt the light]."

Given the film's frugal $25,000 (U.S.) budget, Sivan and his crew of film students from Chennai's Loyola College Visual Communications Department had to be extremely creative in designing shots. The most trying was part of the film's final sequence, in which Malli wraps a

garland of flowers around her target's neck — before a crowd of hundreds — and then kneels respectfully and detonates her belt of plastic explosives. The scene is suggestive by design, so it did not require an elaborate pyrotechnics display; surprisingly, the real difficulty was in implying the herds of followers encircling the doomed politician. "Due to our low budget, we had to shoot the final shot — in which this supposedly huge crowd had gathered — with a mere 20 people. We had to portray the victim as larger than life, and also try to create the ambiance of a 'huge crowd.' We ended up making the scene look somewhat convincing by adjusting the macro lens to blur the minister's image."

Contemplating his work, the director/cameraman says that his greatest motivation comes from the mercurial moods of mother India herself. "The best inspiration a cinematographer can get is through the self-discovery that comes with one's travels," he maintains. "While filming, I experience nature to a great extent, whether I'm working during the rainy season, in the desert, or in snowfall. You have the opportunity to witness the seasonal changes, and to constantly predict the [position of] sun. Much like painters, we cinematographers are also inspired through our experiences with nature."

— A. Thompson

Treasure Island (U.S.)
Director/Cinematographer:
Scott King

In making his stunning black-and-white feature film debut with *Treasure Island,* writer/director/cinematographer Scott King turned toward the past — both in his script, which ponders the slippery boundaries dividing narrative and history, and in his choice of equipment and production methods.

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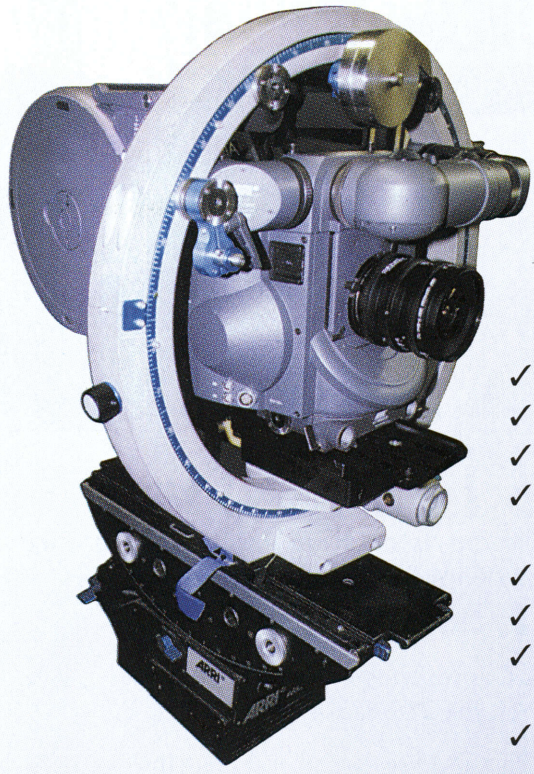

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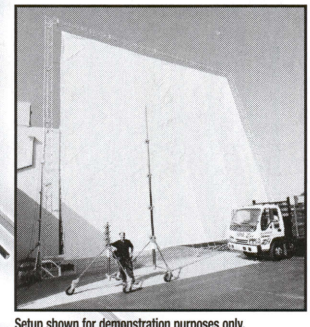

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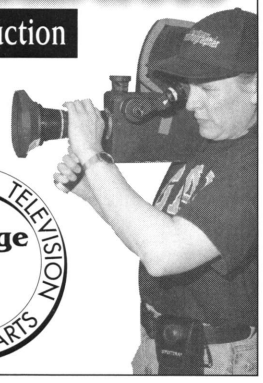

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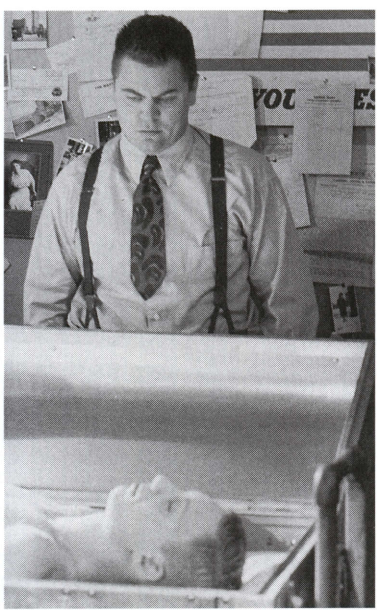
World War II, *Treasure Island* shadows two American naval intelligence agents as they fashion a fictitious persona for a dead body that's going to be left off the Japanese coast prior to a military incursion. The process of creating this fake history entails the writing of well-crafted correspondence to the "man" from his loved ones. While penning these letters, however, both protagonists indulge in some soul-searching that sparks a resurgence of their own repressed psyches. Memories soon lead to madness as the officers slowly scrutinize their own inner lives, as well as the macabre circumstances of this self-examination.

To re-create life during wartime, King — whose previous filmmaking experience includes stints as an executive producer on the indie flicks *Star Maps, Shotgun Freeway* and *Olympia* — taught himself how to reconstruct a 1940s pictorial aesthetic from a top-notch source. "I purchased all of the *American Cinematographer* magazines from 1933 to 1945," he says. King also perused back issues of *International Photographer*, as well as John Alton's black-and-white lighting primer *Painting With Light*. Using these publications as guides, King was able to glean pertinent information about the period's lenses, lighting styles, and processing methods.

King's choice of camera was certainly esoteric; he employed a vintage Mitchell BNCR, a 175-pound camera owned by Paramount and now utilized mainly for television. "It's a fine camera," King says. "It was built in 1932 and then refitted in the 1950s by Karl Freund [ASC] when he was shooting *I Love Lucy*. I initially wanted to use the Mitchell because I thought I could get the old Cooke lenses, which are uncoated and make a softer image. The Cooke lenses are also not very contrasty, and since we were trying to re-create a Forties look, that was important." King could not get his hands on any

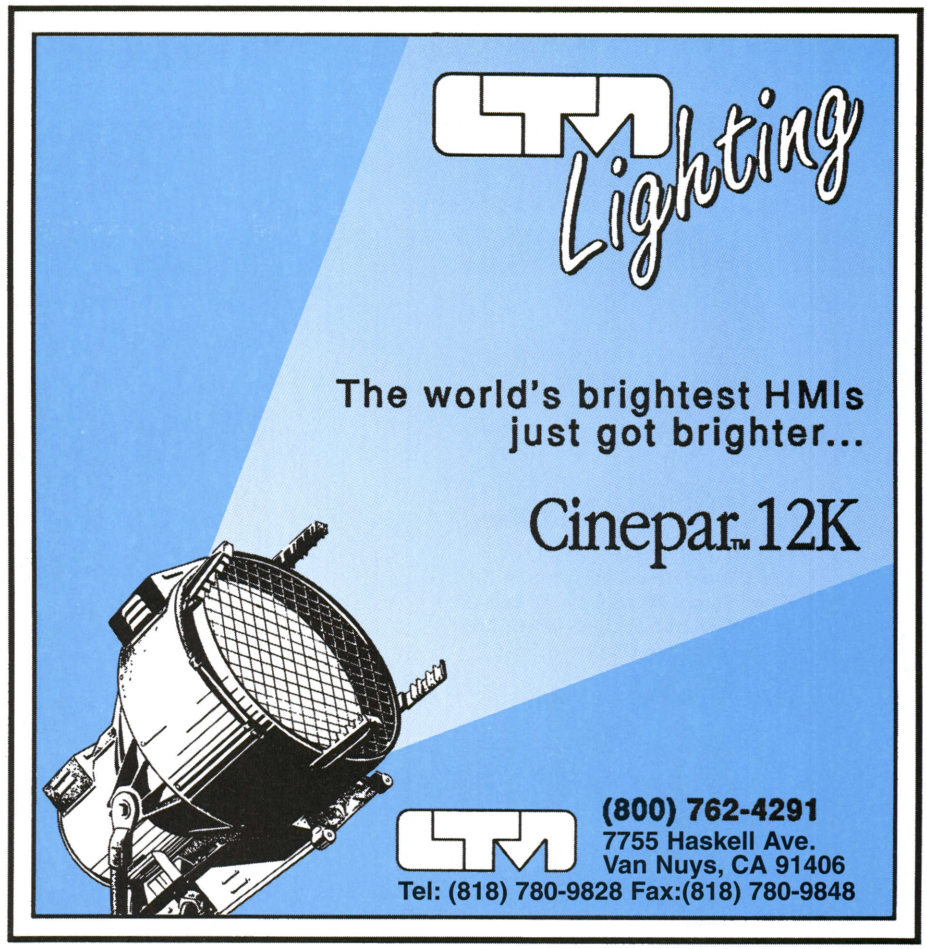
Cooke lenses, however, and wound up opting for Zeiss primes instead.

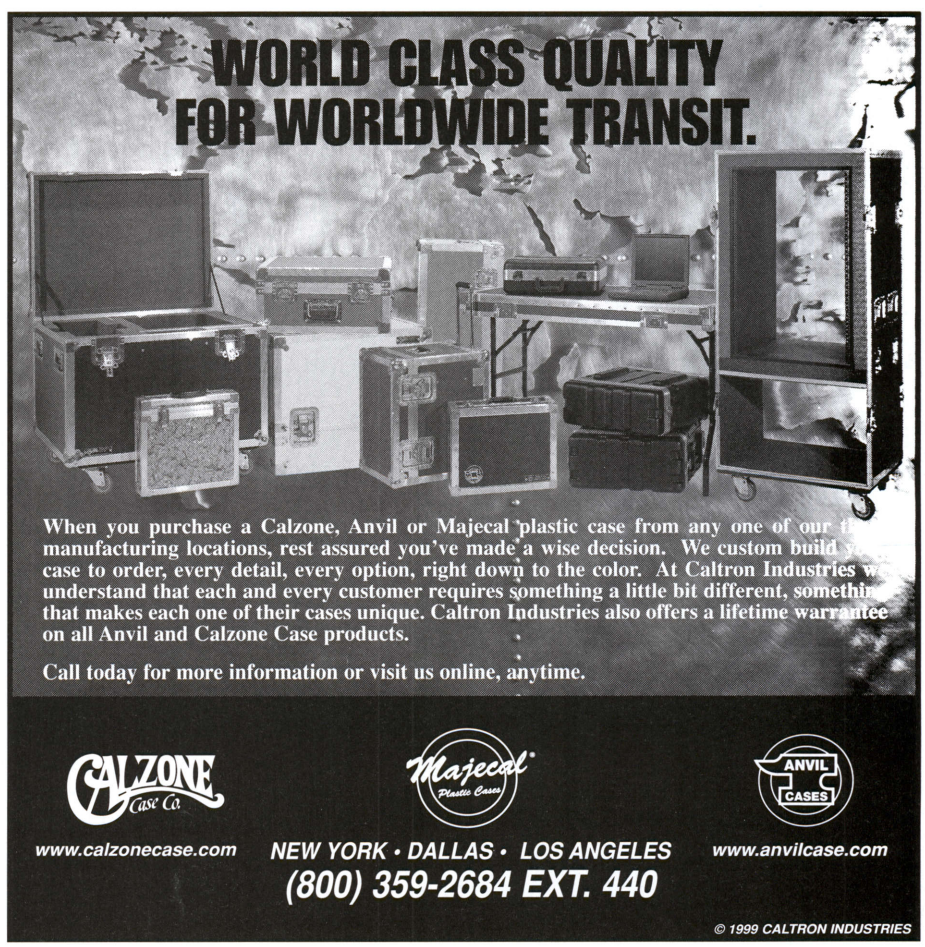
While the camera's enormous weight might have discouraged many filmmakers, King turned into an advantage. "I knew that we wouldn't be moving the camera very much, and we didn't; there are 222 shots in the film, and I think we moved the camera six times. In modern movies, people move the camera a lot, and I don't know if it's always a good idea. The nice thing about the Mitchell is that if you're going to move the camera, you have to know why."



American naval intelligence agent Samuel (Nick Offerman) reflects on the past life of an unnamed corpse (Jonah Blechman) in *Treasure Island,* an offbeat drama set during World War II.

In addition to keeping the camera still, King hewed to a few other rules with what he describes as "fascistic" intransigence. "We shot the entire film at an aperture of T2, without exception," he says. "We only adjusted the light. I wanted [the look] to be as soft as possible, not only in terms of the contrast, but also in terms of the depth of field. When you look at old movies, it's surprising how little depth of field there is, and how much attention the filmmakers





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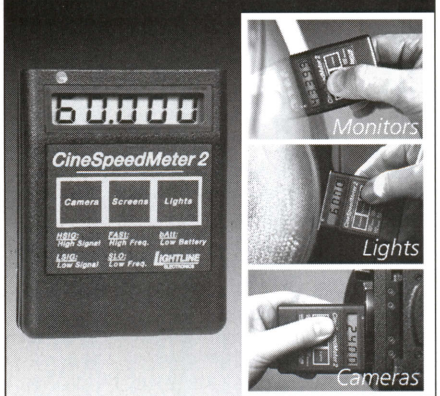

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Photos courtesy of King Pictures.

Samuel's wife, Penny (Daisy Hall), composes herself before offering a potential suitor a tantalizing proposition.

are paying to focus." King's use of extremely short depth of field allowed him to fully explore the creative possibilities of focus. "One of the neat things about the film is that you're not always sure what the hell is going on," he explains. "There's always a part of the story itself that's out of focus, a part that you just can't make out. To my mind, it was really fun to have the ability to focus on people where I wanted."

In his aim to approximate the past, King photographed *Treasure Island* on Kodak's 5222 black-and-white stock. "In the old days, they were shooting at 8 ASA, and had these giant arc lights everywhere," he notes. The director/cameraman tried to simulate that lighting approach with plenty of hardened ambiance.

To maintain a full tonal range in his palette, King banished shades of black and white from his sets. "The images are all grayish," he details. "Back then, cinematographers felt that if you were shooting black-and-white, it had to match the colors tonally. They were thinking in terms of pure color, so as a result, their version of black-and-white is much different than what we see today."

King also deployed colored filters and fixtures to accentuate the tonalities of his monochrome emulsion. "If you put someone in green light [when shooting in black-and-white], the person looks really old and tired," he explains. "But if you put a person in pink light, all of the tones even out — the skin becomes lighter than everything else [in the frame], and you can do some amazing things. While this technique is still practiced in still photography, I think that really being aware of what color can do is a lost art." In terms of filters, King employed a coral 2 indoors and a red 1 outdoors; he also endowed his imagery with a slight tint and texture by shooting through a nude silk stocking, which he special-ordered from Paris.

The result of King's adherence to classic methods is quite impressive. *Treasure Island* sparks an uncanny connection with another era and aesthetic, reminding us why indie moviemaking is crucial to cinema history. In discussing the film's gamut of inspirations, King states, "There are always going to be [mainstream] movies starring Meg Ryan and Tom Hanks — you can't compete with that, and you should not try to. But I think the role of independent film is to make something so different that people really want to see it. Why bother making it unless it's different?"

— H. Willis

■

Short Takes

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Money Shots

by Stephanie Argy

Cinematographer Thomas Kloss was somewhat skeptical when director Steve Beck approached him about shooting a series of First Union bank commercials. He couldn't believe that the director and agency wanted to carry out such a complex concept. "When I saw the boards, I said, 'Are you sure you want to do this, or are you just trying to tease me?'"

Kloss also had concerns that his photography would end up buried beneath a mass of digital manipulation. "I didn't want to work on a commercial where you're being driven by postproduction," he says. "But Steve turned it all around." To his delight, Kloss found that Beck and Industrial Light & Magic's postproduction crew built the effects around the cinematography, and not vice-versa. "The effects team came to me and asked, 'So, what do you want to do? How do you want it to look?'" Kloss told the effects artists that the commercial shouldn't look too clean or inorganic. "It took a lot of effort to make that look work," the cameraman says.

The spots are set in a surreal, scary world in which businessmen are menaced by financial pitfalls that have come to life. "They are creating these dangerous banking environments, but then they come up with the solution — First Union — that shows you a way out of it," Kloss explains.

According to Beck, the agency had written several imaginative scenarios that gave a well-developed sense of the world that would be portrayed in the commercials. But since the agency had not created storyboards, Beck was able to flesh out the spots himself. "It was an opportunity to create something from the ground up," he says. "It was a wonderful process."

The world of banking is given a surreal twist in the First Union commercial "Launch."

Beck notes that the look of the spots — especially the first in the series, "Launch" — was inspired partly by the color scheme and oppressive appearance of the U.S. Treasury building as displayed on the back of the five-dollar bill. The director solicited Kloss's suggestions on how to best create the piece's imagery, and thus gave the cameraman an immense amount of freedom. "We didn't set any boundaries, because we didn't want to take him to a point where he couldn't use any part of the frame," says Beck. "We tried to let him be the maestro as much as possible. I think that's the best way to work with directors of photography, anyway. Cinematographers are rarely used to their full ability — they're usually reined in."

Kloss has many years of experience shooting commercials, and began his career in his native country of Austria. Born in Vienna, he comes from a family of photographers. After finishing high school, Kloss enrolled in photography school, but later chose not to pursue a formal education. In 1980, he began working as a production assistant in the Austrian movie business. When a need arose for documentary cameramen, Kloss entered the world of nonfiction filmmaking. "In Europe, I really had to work my way through documentaries into commercials," the cameraman recalls. In 1984, Kloss started his own production company, which he sold five years later upon moving to America. During his time in the States, Kloss has shot commercials, music videos and the feature films *Palmetto, Fear* and *Pontiac Moon.*

On the First Union spots, Kloss took an approach that moved the agency and postproduction team in a rather radical direction. "To get the scope for this kind of commercial, it's necessary to use really extreme lighting and lenses," he notes.

In terms of the lighting and coloring, for instance, Kloss pushed the spot towards a strange look. "The concept

First Union's digital world of dollars and cents combines the cinematography of Thomas Kloss with the postprocessing wizardry of Industrial Light & Magic.

was that we would use regular colors — mainly blues and oranges — and alter them a little bit. We tried not to go too overboard, though; we altered the colors just enough so the viewer would feel it could be a real environment, but with a different twist."

Green and yellow were particularly important hues in Kloss's palette. "Green is a color that makes things look a little bit more off," he says. "In some of the environments, we used Kino Flos and added green to the light, so it had a bit stronger fluorescent look. Or, if we used oranges, we tried to add in some green — we used offbeat or ugly colors." He also deployed HMI lamps, again adding a bit of green, and without correcting the blue tones, "or we used Dinos with green-blue, dichroic globes, and added a half-blue on them." (Kloss further enhanced the spot's appearance with old-fashioned mechanical techniques such as big window fans, which blew Fuller's earth into the air for day exteriors.)

Visually, the cinematographer wanted to maintain an extreme effect, which he felt would be best accomplished with lenses that were at the wide end of the spectrum. "We used a couple of really long lenses (300mm and 600mm), but very rarely, because I felt that the commercial needed a more wide-angle look," he expounds.

Kloss mainly employed an Arriflex 435 ES camera fitted with the new Cooke prime lenses. "Otto Nemenz gave me a full set right at the beginning," he says. "I was very surprised at how well those lenses worked in extreme flare situations. There's an incredible color consistency throughout the whole range of lenses, they have a good black content for a contrasty look, and they have a very low level of flaring." He finds this the Cookes to be a great improvement over many other lenses, which can become soft if coated to prevent flaring.

The new Cookes run from 14mm to 100mm, notes Kloss, who successfully utilized a prototype 14mm lens on the First Union shoot. "We tested all of the other ones first, and then the 14mm came in," he relates. "Cooke did a tremendous job of getting us the lens and matching the prototype to the existing lenses." To supplement the Cooke series, Kloss also used Zeiss 10mm and 12mm lenses for some of his widest shots.

Another important element of Kloss's photography was filtration — primarily neutral density grads. "We used them depending on what we needed, between ND3 and ND12," he says. "The ND grad is something you have to be very careful using, so it doesn't get too heavy or too light. You don't want a very heavy-handed application that you can read immediately." Since filters made by different manufacturers can have very different looks, Kloss himself owns about 40 or 50 ND filters.

For day exteriors, Kloss exploited Kodak's 100 ASA EXR 5248 in order to maintain "deep blacks and sharp edges," while the interiors and nighttime exteriors were shot on Kodak's 500T Vision 5279, which the cameraman believes to be "the most convenient stock for this type of commercial, because of its huge latitude and range. If you start getting into dangerous exposures, the 5279 still reads without getting grainy."

Of course, postproduction was an important step on a commercial that was subjected to nearly every process imaginable, including CG set extensions, digital mattes, model miniatures, bluescreen and Flame compositing. Fortunately, Kloss was able to execute his camerawork at the highest level of digital technology under the best possible circumstances. "It was very pleasing to me to work with the visual-effects supervisors and see what their capabilities were. That whole collaboration was very impressive." Still, he did remain somewhat concerned about his true role in the commercial's creation. What finally reassured Kloss was ILM's agreement to print some shots on film, so that he could view his imagery prior to its manipulation. He says, "I wanted to make sure that the whole look wasn't created in post."

Exploring Atlantis
by Stephanie Argy

While most commercials merely sustain the identity of their products, a few have to fashion that identity by introducing something brand-new. Director Meiert Avis faced such a situation while producing a spot for Atlantis, an upscale resort located in the Bahamas. "It's a launch commercial," he says. "It's not like working for Proctor and Gamble, where they're making a new spot every year, and everyone's in a groove." The commercial's production concerns became further complicated by the fact that the resort was still under construction. "Trying to time the media launch with the construction of the hotel was an exercise in pure logistics. But I've never walked onto a set that's finished, so [the site's incomplete state] didn't really worry me."

The spot opens in a New York subway station with a man waiting for a train. When the train arrives, it is filled with water and fish, and glows with an ethereal blue light. The subway door opens, but the liquid remains inside. The man touches the water's vertical

surface, and then steps into the commuter car. He plunges inward, past schools of tropical fish, and comes upon the mythical lost city of Atlantis.

To capture the commercial's different segments, the company spent one day in New York and three days in the Bahamas, as well as with a day in Los Angeles for effects work.

The New York subway sequence was photographed by cinematographer Garry Waller, who was instructed by Avis to make his images as "weird as possible." Though the subway's available fluorescent lighting already had a greenish cast, Waller wanted an even deeper verdant hue. "I just kept thinking of green, and actually added more to the fluorescents," Waller says. "We gelled about 200 lamps in there with plus-green."

The crew shot the subway scenes in Manhattan's World Trade Center station, on an isolated section of track. Being separated from the rest of the station precluded Waller from illuminating the space beyond the immediate area, but Avis wanted the field of view to encompass the tunnel's entire breadth. "Knowing that there was very little light in there [to expand the area that could be seen], I went with Kodak's Vision 5279, because that stock really reaches into the dark areas," the cinematographer says. Waller also tried to increase what could be seen on film by selecting fast lenses. "I knew we were going to be shooting wide-open, so I ordered Primos, [sticking mainly with the 10mm lens and the 4:1 17.5-75mm zoom,]" he says. "We used a Panastar, because we were also thinking about doing some high-speed shooting and wanted the steadiness [that the pin-registered camera provides]."

To produce the light effect shimmering out of the train as it pulls into the station, Waller hung silver Mylar loosely on frames and then bounced HMIs into them at 45-degree angles. "Mylar is highly reflective, but it's not like a mirror," he says. In order for his shots to rise above the train, Waller employed an underslung Weaver/Steadman head on a Fisher dolly with a jib arm.

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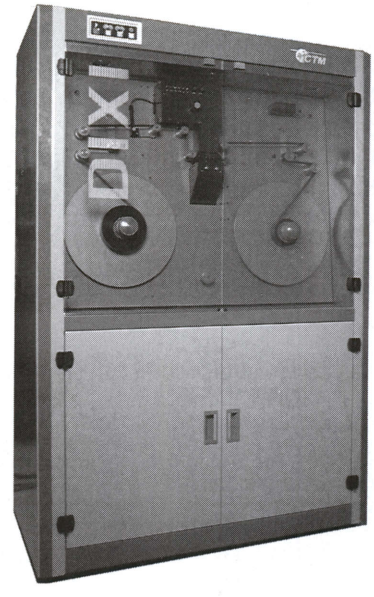

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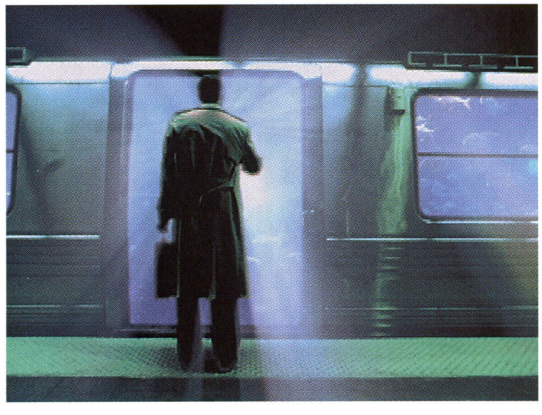

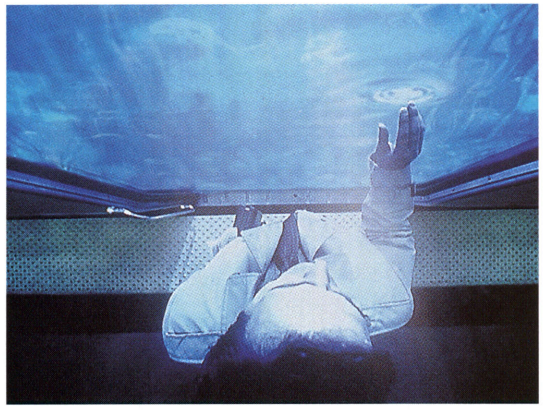

A businessman enters an aquatic commuter train that will whisk him off to Atlantis, an upscale vacation resort in the Bahamas.

sequence, Avis traveled to the Bahamas to film the resort. Aerials of the resort complex were accomplished with a helicopter-mounted Wescam, operated by David Norris. According to Avis, the most taxing aspect of the aerial footage was finding the angles at which the hotel looked best, with the most complementary lighting and the least amount of visible construction equipment.

The crew then had to film underwater footage of tropical fish in the hotel's enormous underwater habitat. Avis served as his own cinematographer on the underwater work, using Hydroflex housings and an Arriflex 35-III. After deciding that directing from above the water was a bit unwieldy, Avis learned to dive. Once underwater, he learned that operating and shooting was much simpler. "I started swimming around with the camera, and it was actually incredibly easy, because the camera didn't weigh anything. It's as if one person is operating a Steadicam and a crane. You also can see what the hell is happening [in the frame]. For example, you can signal the talent as you swim toward them."

Underwater shooting continued when the production relocated to Los Angeles for a day of effects work. There, they filmed the spot's protagonist stepping into the water-filled subway car. To lend the actor's aquatic entry an adequate display of force, the crew decided to drop the performer into a water tank from above, while shooting from beneath the surface. "It was one of those simple-looking shots that was actually very difficult to do," says Avis. "EFX Innovations rigged the talent off of a high-diving board so he could be dropped into the water. He only dropped five or six feet, but it sure knocked the wind out of him."

Though the actor was plunged into the water horizontally, the shot had to be oriented so that he appeared to be standing up and moving through the door from a vertical standpoint. For example, to preserve the illusion that the man was in an upright position, his suit couldn't appear to be dangling in front of him. "His clothes had to be rigged with wires so they wouldn't hang down," says Avis.

Afterwards, the actor's harness was removed digitally by Flame artist Stefan Smith, who did all the spot's compositing work with the Discreet Logic system owned by Avis's production company, Windmill Lane. Smith then began assembling shots by manipulating still frames, creating its look while the director and editor were still engaged in offline editing. "Since they can see which stories are being told in which frames, it helps them form the edit — even though it's only in stills," Smith says.

All of the spot's effects were achieved in Flame's 2-D environment. "There was no CGI," Smith notes, adding that Flame even fabricated the subway-car water and light rays. "The biggest job was making the water, which was basically created by combining layers. Water has a very complex behavior — the more layers we added, the better it looked."

To enhance the aquatic environment's authenticity, Smith also added dolphins to the footage of tropical fish filmed in the Bahamas. "The dolphins were added for scale," he says. "Ocean fish are really bizarre-looking creatures — you don't really know how big they are. But everyone basically knows how big a dolphin is, which made [the underwater scenes] look a lot more realistic."

Smith says that one of the pleasures of working with Windmill Lane is that Avis knows how to shoot in a way that facilitates the flow of postproduction. According to Smith, other directors and cinematographers sometimes have misguided priorities when shooting scenes that will be manipulated in post. "I think people put too much importance on bluescreen," says Smith. "The main things to remember are the direction of the light and whether it's indoor or outdoor light."

Proper planning is also critical. While Avis likes to leave room for on-set experimentation, he does map out a great deal of the effects work ahead of time. "If you have to match three or four different shots to build an effect, you need to make the lens choice at the beginning. Imagine [17th-century Dutch painter Jan] Vermeer trying to paint one of his paintings in 10 different layers, and then put them all together without some sort of planning. In order to assemble the various elements for an effects shot, you must have an idea of what the finished product is going to look like, or you might find that the pieces don't fit together."

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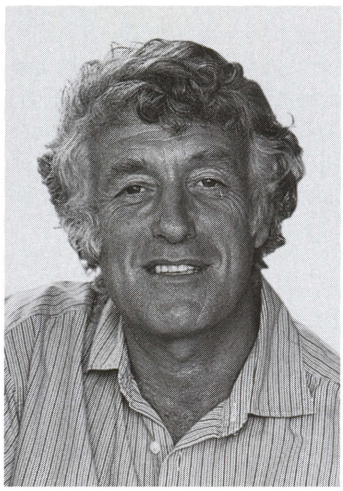

Director of Photography Roger Deakins ASC BSC

"Here's the way I like to work," says Roger Deakins: "Prime lenses, close to wide open, no diffusion, no flare. For all that, the new Cookes are the best I've worked with"

"There's a lot of mystification about cameras and lenses," says Roger Deakins. "People prefer one major camera or another, but they're *all* good; and so are all three major lens systems."

"Stopped down to T5.6 or further, very few people looking at the screen can tell which make of lens was used, on most shots. But I like to shoot lit interiors between T2.5 and T3.2. At those apertures and wider, I've been able to see some differences."

"A while back, I went straight from shooting a film with one set of lenses to shooting another with a different make. I noticed that the other lenses weren't really as fast, wide open, as their markings *said* they were. Looking at the printer lights, I could see I wasn't getting as much exposure. When you're taking a filmstock to its limit, that makes a difference."

"I've seen the bare lightbulb test footage; and I made some comparison dusk street-scene shots myself, when the first Cookes were delivered. *Fantastic.* No double kick from car headlights, even wide open. And in terms of clarity and sharpness, the Cookes were the best I'd seen."

"On the film I'm shooting now, we made a sunset shot with a very hot sun in the frame. I used the Cooke 32mm with nothing in front of the lens; and I knew it would be clean. That's what these lenses do for me: *they let me take a few more risks.* I feel more confident about putting a hot light or the sun in frame and still getting shadow detail and little or no flare."

"There's only one thing I don't like: not enough focal lengths! They tell me they're coming out with more — I wish they'd hurry up."

Some Roger Deakins credits and awards:

A Director of Photography since 1983, his film credits include FARGO and KUNDUN, for both of which he won Academy Award Nominations; and SHAWSHANK REDEMPTION, for which he won both an Academy Award Nomination and an ASC Award.

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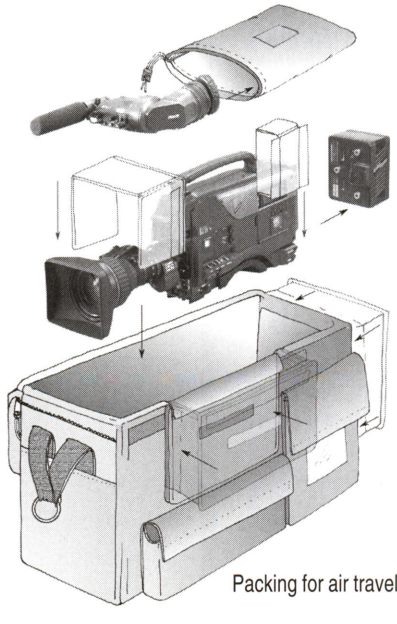

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completed negotiations on a contract for the commercials industry which was recently ratified by the Local 600 International Cinematographer's Guild. The contract covers the terms of commercial shoots for AICP members. This agreement covers some 37 states, encompassing the regions designated as the Northeast Corridor and Outer Region. These areas run southwards from Minnesota to Texas, extend to the Eastern coast and include Puerto Rico. This contract recognizes Local 600's nationalization, and no longer bars members of one Local 600 territory from working in another region. According to AICP President Matt Miller, this marks the first time that one contract containing so many states has been approved by an IATSE National/Local. Copies of the contract are available at any Local 600 regional office.

Founded in 1972, the AICP is a national trade association that represents the interests of American television production companies which generate commercials for advertisers and agencies. The association has central offices in New York and Los Angeles, along with eight regional chapters across the nation. Its members make up 85 percent of those involved in the production of national and regional TV spots.

For more information on the AICP, contact Jane Nuñez at (323) 960 - 4763. ■

If you have a commercial or music video production that you would like to submit for the Short Takes column, send a VHS copy of the spot, all pertinent contact and credits information, and artwork to AC *associate editor David E. Williams at 1782 N. Orange Dr., Hollywood, CA, 90028. He may also be reached via e-mail at david_williams@cinematographer.com. Images (color and black-and-white) may be sent as prints, 35mm slides, or high-resolution (300 dpi) Photoshop TIFF files on Zip or Jaz discs.*

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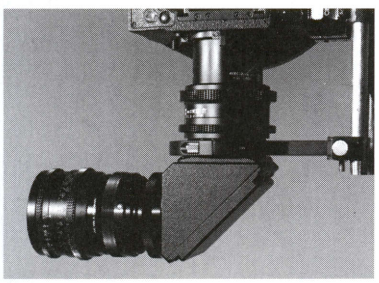
New Products

compiled by Fae Moore and Andrew O. Thompson

Junior Periscope

Clairmont Camera has announced the arrival of its Baby Periscope. Like the larger Century 2000 Periscope, this unit allows one to extend the lens away from the camera to achieve viewpoints not otherwise possible. It can be configured with a straight relay, as well as with a right-angle attachment that can capture subjects that are above, below, to the right or left side of the camera. The periscope contains integrated focus and iris gears for use with follow-focus and iris-control systems. Linear iris markings facilitate the unit's use with automatic iris systems. The maximum aperature is a T5.6. To set the iris, the user should first adjust the lens to



a wide-open setting and then set the appropriate stop on the Baby Periscope iris ring. No light loss will occur, regardless of its configuration. The Clairmont Baby Periscope has two 40.5mm filter slots. It is available in PL mount only, and is compatible with the same lenses accepted by the Century 2000 Periscope. The Baby Periscope measures 8" from the camera mount to the bottom of the prism housing.

Clairmont Camera, (818) 761-4440, fax (818) 761-0861.

Wider View for SwingShift

Century Precision Optics has developed a 14mm f2.8 lens for Clairmont's SwingShift system, which

operators can use to distort the shape of a subject, remove unwanted objects from a frame, or shoot straight into a mirror without catching unwanted camera reflections. The SwingShift offers nearly total control over the focus plane, allowing extremely deep or shallow depth of field without requiring exposure or focus changes.

Century Precision Optics, (818) 766-3715, fax (818) 505-9865, website: www.centuryoptics.com.

Improved Color-Separation Emulsion

Kodak has introduced its new 2238 Panchromatic Separation stock, an improved black-and-white film designed to extend the archival life of valuable color motion pictures. By using 2238 to make separate photographic records of the relative intesities of a negative's primary colors — red, blue and green — the resulting separation masters can be safely held in long-term storage, and later recombined to produce a new color intermediate element that accurately replicates the subtle details in the original imagery. This stock can also be employed to restore color emulsions with dye fading problems, and to facilitate specialized optical special effects applications, including fine-grain separations for blue- and greenscreen traveling mattes, and density-cover mattes.

2238 Panchromatic Separation stock has a rugged Estar base that resists shrinkage, chemical deterioration, and other physical damage. According to the ANSI/PIMA 9.11-1998 standard, Processed Safety Film Storage, the predicted life expectancy for black-and-white film on a polyester base is a minimum of 500 years when stored at appropriate ambient conditions (21°C/70°F with 50 percent relative humidity).

Alan Masson, Kodak Hollywood's director of engineering, explains that modern spectral sensitizing dyes allow the new separation film to replicate image information more faithfully. He adds that 2238 is marked by an improved structure which produces enhanced sharpness and less highlight grain. The blue record is more sensitive and also has a thinner emulsion and new gelatin hardener. These features result in faster drying time and a longer shelf life. A number of emulsion chemicals have also been eliminated, which is beneficial to the environment.

Contact your local Kodak representative, or visit the company's website at www.kodak.com/go/motion.

Arri Software Update

The Arriflex Corporation has released version 1.4.0 of their Laptop Camera Controller (LCC) software for the Windows '95 and Macintosh operating systems. In addition to remotely controlling all new-generation Arri cameras (the 435, 535, 535B and 16mm SR-3), the LCC 1.4.0 offers remote control of the 435 Integrated Video Assist (IVS) character-inserter functions, plus a handy "Find" function. The new IVS Character Inserter window allows easy insertion and placement of text and frame outlines in the video signal, which can then be moved by dragging directly on the computer's screen. In all, 52 characters of user-defined text can be entered directly

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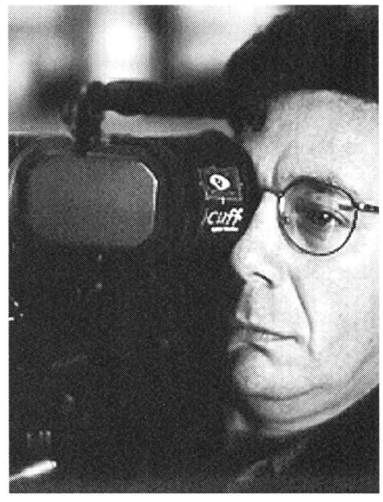
on the screen. The LCC 1.4.0's advanced features include the ability to show any text for only a given amount of time after camera start, automatic insertion of camera warnings (like LOW BAT) into the video signal, and the ability to display any camera status information, including the frame rate, shutter angle, footage counter, scene number, and take number. The LCC 1.4.0 is distributed on a CD-ROM that also contains a variety of Arri manuals, quick guides, brochures, and technical notes in the Adobe Acrobat PDF file format.

Arriflex, (818) 841-4028, fax (818) 848-7070, e-mail: arriflex@arri.com.



Eyecup Extension

Raider Productions unveils the i-cuff, a camera eyecup adapter designed specifically for camera operators who wear glasses. Created by Emmy Award-winning cinematographer Ira Raider, the i-cuff eliminates all extraneous light from entering the viewfinder. An elastic ring, the i-cuff is made from waterproof, breathable, lightweight fabric, and designed to fit all video and film cameras with a viewfinder diameter of 3 1/2" or less. Its Velcro tightening strap allows for individualized positioning and a personalized fit. And the i-cuff's contoured, wrap-around design features a thick, ultra-suede chamois surface to cushion the operator's face.

Raider Productions, 1-800-793-3006, website: www.i-cuff.com.

Avid for Indies

At the 1999 Sundance Film Festival, Avid Technology, Inc. exhibited the Avid FilmScribe, a stand-alone, frame-accurate cutlist-generation tool for Windows NT. Also demonstrated was a FilmScribe bundle which offers independent filmmakers postproduction capabilities on the Avid Xpress system for Windows NT. The FilmScribe is based on the same technology as the Avid Film Composer. Its tight integration with Avid editing products (via native Avid bin support) eliminates the need for translating Edit Decision Lists (EDLs) for film-list generation.

The FilmScribe delivers automated list generation for editors as well as negative cutters. As a stand-alone application, the software helps filmmakers generate accurate and detailed lists to ensure correct cutting and assembly of film negative and workprint, while the FilmScribe bundle includes overall functionality plus the following features: the Matchback Option (which allows users to generate a negative cut list from any 30 fps or 25 fps sequence), AutoSync (which enables users to easily marry picture and sound elements from dailies), and a timeline "dupe detection" function that interactively marks any frames used more than once in edited sequences, improving footage management for the negative conform.

The FilmScribe also offers the ability to create cut lists and change lists for all film gauges, including 16mm, Super 16, 35mm, (2-, 3-, 4-, and 8-perf), and 65mm (5-, 8-, 12- and 15-perf). It can also convert 30/25 fps-edited sequences into 24 fps cut lists, allowing filmmakers working in video to develop lists necessary for a final cut in film.

When employing FilmScribe with matchback projects, users can include information on four picture tracks for all cut lists and change lists. The matchback function also supports 16mm and 35mm projects. The system can also devise cut lists that describe all layers and effects created by Avid's Media Composer or Film Composer systems, as well as Xpress and Symphony systems, allowing all editorial and effects work to be repre-

sented in the cut list for previsualization. This includes pixel-based effects information, such as those created by Intraframe editing and AniMatte, which allows users to create animated, key-frameable mattes. Another feature allows for the development of optical lists for chroma and luma keys, superimpositions, and titles, so all the work done in offline editing can be represented in a cut list.

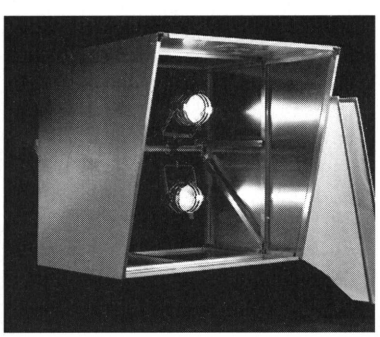
The FilmScribe fully supports Avid bins and sequences originating from the Media Composer or Film Composer systems (versions 6.5.3/7.x); the Symphony system; and the Xpress for Macintosh (versions 1.5.3/2.x) and Windows NT systems.

Avid, (800) 949-AVID, website: www.avid.com.

Specialized Softboxes

Finn Film Services, Inc. now offers a lightweight diffusion box designed to achieve soft, projected front lighting on sitcom-style sets without interfering with camera equipment or obscuring the audience's view. Thirty of these new "Finn Boxes" are being utilized on the ABC series *The Hughleys.* This patent-pending device has a lightweight, modular, and foldable design, measures approximately 4' x 4', and is angled to allow maximum downstage coverage. Made from lightweight aluminum, the Finn Box has a built-in Speedrail bar to allow the mounting of multiple lighting instruments, and features two removable diffusion screens.

Each Finn Box is fitted with two medium Par cans in the upper half, and two wide Par cans in the bottom half for the "key" side. The diffusion screens are loaded with light gridcloth and Lee 187 cosmetic rouge gels. The boxes are



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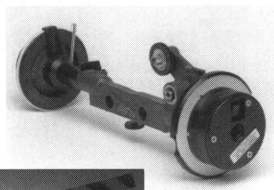

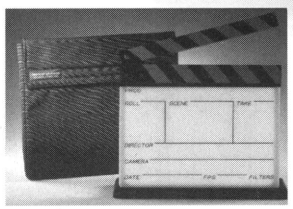

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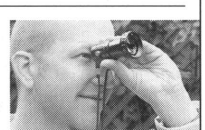

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usually mounted together in a flush position and suspended from greenbeds. The projected front light should be kept under and parallel to any sound booms rigged to the greenbed, thereby eliminating boom shadows.

Finn Film Services, Inc. (310) 828-7919, fax (310) 837-2286.

Curved Track

Long Valley Equipment has introduced a 1.5" schedule-40 ABS curved dolly track that mates seamlessly to like-sized PVC or ABS plumbing pipe. It has an inside radius of 6' and an outside radius of 8'; overall, this is 2' tighter than standard steel track, and is intended for use in those small location shoots where moving a wall or some other obstacle is unfeasible. Two sections of track make a 90-degree turn, whereas eight sections form a full circle. Each section comes complete with "Track Locks," which are permanently installed expanding connectors used to join the pipe ends together from the inside, so there are no bumps to jostle the dolly. The larger outer curved section comes in two pieces for easy stowing in the standard Cordura Track Pack bag.

Long Valley Equipment, (908) 876-1022, fax (908) 876-1938.

Unique Tool Belt

Kinesis has designed a modular, foam-padded production belt for grips, gaffers, and cinematographers. The basis of the system is a 4"-wide foam-padded belt that is conically cut for a proper fit. Pouches are then individually attached to the belt for custom configuration. The production bag features a top-opening, zippered main compartment with an inside stash pocket. The outside zipper features an effective all-weather flap. The belt is lined with foam around the back and bottom. The bag's front features a bellows pocket, two slip pockets for pens or business cards, and a small, zippered compartment. A removable/convertible 1" shoulder/waist strap is also provided. The bag can attach to any Kinesis or other brand of pants belt, and includes a sewn-in hand-grab loop. Its exterior is constructed with DuPont Cordura nylon and has a waterproof urethane coating.

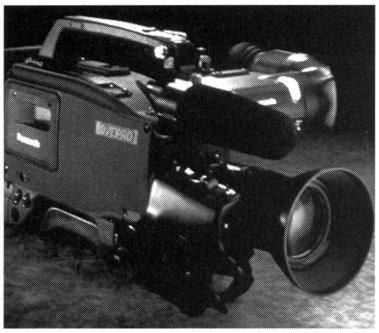
Kinesis, (888) 716-5550, fax (303) 425-3530, e-mail info@kinesisgear.com, website: www.kinesisgear.com.

Digital Camcorder

Panasonic Broadcast & Digital Systems Company (PBDSC) introduces the AJ-D400 DVCPRO camcorder. The unit features three low-smear, low-noise ½" 410,000-pixel FIT CCDs. In ready-to-shoot condition — with lens, 1.5" viewfinder, cassette and battery pack — the AJ-D400 weighs under 13 pounds, and its power consumption is only 23 watts. The camcorder records for 66 minutes, and can play back pictures in black-and-white on the viewfinder or in full color on an external monitor. The AJ-D400's +30dB gain-up allows high-quality shooting in lighting as low as 2 lux. The programmable 3-position gain switch allows the operator to select from 11 settings for complete control of low-, medium-, and high-gain preferences.

The AJ-D400's digital-component recording delivers superb picture quality across a 5.75Mhz video bandwidth, and the video S/N ratio is an impressive 55dB. The camcorder's digital audio system capabilities include a 48kHz-sampling, 16-bit-recording, two-channel PCM digital system. The settings displayed by a menu visible in the viewfinder include a 2-D Low Pass Filter (which eliminates cross color), Dark Detail (to correct details in dark areas), Chroma Detail (to correct degraded resolution in brightly colored areas), Matrix (which corrects six types of color phase), Super Color (to emphasize "highlight" colors), and Black Stretch (which gives black areas more emphasis).

The AJ-D400's industry-standard bayonet mount accommodates a wide variety of conversion lenses. The camcorder also features automatic shading correction, which adjusts the setting



to match the lens. Additional features include a programmable one-button Super Iris and Super Gain; a Synchro-Scan Electronic Shutter (with six settings from 1/100 to 1/2000 second) that reduces flicker while shooting CRT displays; a shockless Auto Control that adjusts white balance according to the image being shot; a standard SMPTE color-bar output; built-in Genlock; a built-in SMPTE time-code generator/reader; a one-touch camera-status-report function; one-touch record review function; a built-in monitor speaker; a phantom power supply; and an optional RET-video input and time-code input/output. Standard accessories include a 1.5" electronic viewfinder, a microphone, a tripod adapter, and a Anton/Bauer Gold Mount Plate for compatibility with the Anton/Bauer digital battery system. A 26-pin VTR connector is optional.

Panasonic Sales 1-800-528-8601, website: www.panasonic.com.

Application Software

Xytech Systems Corporation has released Xytech Enterprise 2.0, a fully integrated facility-management application designed for the media and entertainment industries. This new business operation application is a comprehensive resource management and scheduling system. Enterprise 2.0 runs on Microsoft Windows 95/98, NT, Macs, and standard Web browsers. The application supports many databases, including Oracle v7/v8, Sybase Adaptive Server Enterprise v11.5, Adaptive Server Anywhere v5/6, and Microsoft SQL Server 6.5/7. Enterprise 2.0 is an open-architecture solution that supports multiple sites, companies, divisions, currencies and language. The application is available as a complete system

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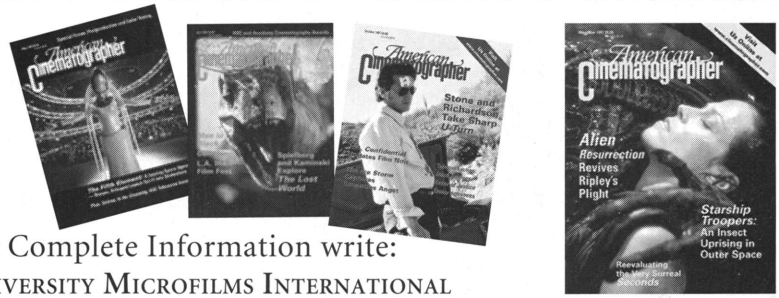

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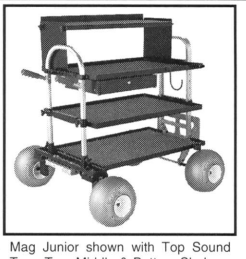
Mag Junior shown with Top & Bottom Shelves, Adjustable Nose, 8" Wheel Conversion Kit, Hi/Lo Hat Holder, Tripod Holder and Mitchell Mount.

Mag Senior shown with Top and Bottom Shelves, HD Nose, Grip/Light Caddy, Handles, 8" Wheel Conversion Kit, Dual Axle Kit , Video Pin, Video Bracket and 9" Monitor Trays.



Mag Junior shown with Top Sound Tray, Top, Middle & Bottom Shelves, Adjustable Nose, Sliding Drawer w/ Lock, Cable Hook, Mike Boom Pole Holder and 8" Wheel Conversion Kit w/ optional Sand Dune Wheels.

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35 MM REFLEX

The Fries model 435 is a new general purpose MOS production 35mm camera. With its optical printer compatible register pins, steadiness and 150 FPS speed. The 435 is ideally suited for special effects, commercials or any photography where a quality steady image is desired.

The 435 is a spinning mirror reflex camera with a 170 degree blanking shutter. The internal 30VDC motor runs the camera from 2 to 150 FPS forward and 2 to 50 FPS reverse, in one frame increments all crystal. The camera is equipped with take-up and supply torque motors.

There are both 1000 ft. and 400 ft. displacement type magazines. A new feature is the light valve which allows the operator to direct all the light to the viewing system, or to the video assist, or combo which splits the light between both viewing and video assist.

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WHY NOT SEE THE WHOLE PICTURE?

The new Fries Director's Viewfinder allows the director to view the full camera aperture .980 x .735, thru the same lenses that will be used on the camera when filming. Why aren't you getting the whole picture?

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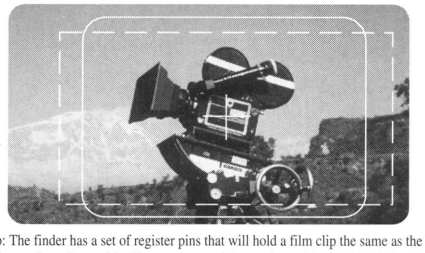

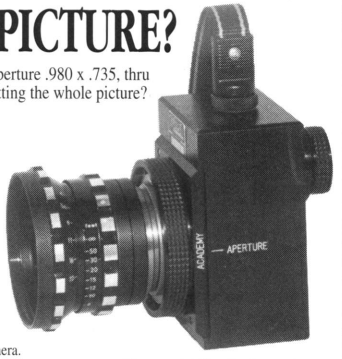

Film Clip: The finder has a set of register pins that will hold a film clip the same as the Fries camera.
Groundglasses: Interchangeable. The same groundglass as is used in the Fries 35R and 35R3 cameras.

Director's Viewfinder

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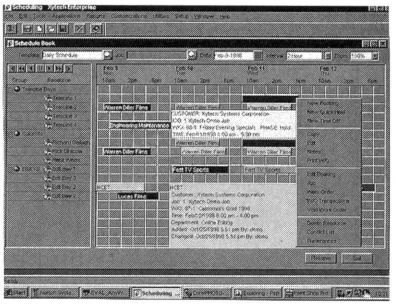

or with separately purchased modules. The applications themselves can be bundled with several integrated modules including job management, scheduling, bidding, library, purchase order, time card, duplication, rental, accounts receivable, accounts payable, banking and general ledger.

Enterprise 2.0 has been designed as an Enterprise-level product, offering a logical migration of existing Myriad Facility Manager sites. Through the use of object-based software technology, companies can now analyze their resource usage, track productivity, and bill for these services more accurately. Enterprise is currently being installed in commercial and corporate production/postproduction houses, satellite broadcasting studios, duplication facilities, major studios, international production facilities, and other companies worldwide.

Xytech, (818) 767-7400, fax (818) 768-7430, website: www.xytech-systems.com.

Wider View for SwingShift

Century Precision Optics has developed a 14mm f2.8 lens for Clairmont's SwingShift system, which operators can use to distort the shape of a subject, remove unwanted objects from a frame, or shoot straight into a mirror without catching unwanted camera reflections. The SwingShift offers nearly total control over the focus plane, allowing extremely deep or shallow depth of field without requiring exposure or focus changes.

Century Precision Optics, (818) 766-3715, fax (818) 505-9865, website: www.centuryoptics.com. ■

Points East

A Digital Dogma

by Eric Rudolph

Advancements in digital video production and tape-to-film transfer — as well as the spirit of the Danish "Dogma '95" decree of filmmaking austerity — recently helped two writers bring some tart, lively comedy to the screen in a pair of bare-bones documentary-style productions.

Sam Seder and Charles Fisher's oddly titled *Who's the Caboose?* (co-directed by Seder and Dean Hollander), winner of the Black Diamond Award at last year's Aspen U.S. Comedy Festival, is a sly mock-documentary feature shot on Digital Beta and later transferred to 35mm film.

Caboose ostensibly begins as a dour investigation into a mysterious new disease plaguing homeless men on New York's Lower East Side. The documentary crew abruptly changes course, though, after encountering an appealing young comic actor named Susan (Sarah Silverman from *The Larry Sanders Show*) who offhandedly suggests that they drop their downbeat storyline and instead follow her to Los Angeles, where she plans to seek fame in sitcoms.

From the moment of Susan's arrival in L.A., however, she meets with one indignity after another. She auditions unsuccessfully for such sitcom pilots as *Don't Forget Your Mother-in-Law* and the *Untitled Nell Carter Project.* and competing actresses hurl epithets at Susan behind her back. Finally, she lands a small, unrewarding role as wacky secretary Stacy Papadooski in a pilot titled *Who's the Caboose?*

Seder and Fisher, themselves veterans of the pilot wars, shot *Who's the Caboose* in a near-ENG-style approach. "When we started shooting *Caboose* three years ago, no one had shot a narrative feature film with established talent on digital video," recalls Seder. "Everyone told us not to do it. We got such a bad reaction to using video that we asked our cast not to tell their agents.

"Even though we made a gorgeous 35mm print, we couldn't get *Caboose* into festivals or land a distributor. There's been talk of serializing *Caboose* on the Web, and it's also been suggested that we wait awhile and try again, since the careers of several actors featured in *Caboose* are heating up."

Undaunted, Seder and Fisher recently completed *Beat Cops,* a half-hour television comedy pilot financed by USA Studios. *Cops* takes the loopy semi-documentary, bare-bones style of *Caboose* even further. The pilot was shot entirely on the streets of Manhattan in ENG style on high-definition video, using no interior scenery and no artificial light sources.

Beat Cops follows the mis-adventures of Stan (Seder) and Hank (Jon Benjamin, who plays a sleazy Hollywood attorney in *Caboose*), two troubled, dim-witted New York City police rookies who, upon graduation from the academy, wisely ask for and receive permanent desk duty.

After being sent out on their first-ever foot patrol, however, the two are so hapless that they have to ask a dangerously deranged doorman (Assif Mondvi) for directions to Sixth Avenue. The pair are then hectored repeatedly by a wannabe cop-turned-mail carrier (David Waterman, another *Caboose* standout), and their situation comically deteriorates from there. ➢

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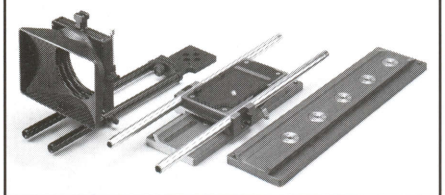

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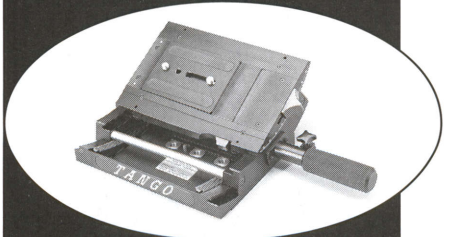

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Beat Cops could have been shot on emulsion, of course, but a more traditional approach would have cramped the filmmakers' loose, low-tech, improvisational production style. Seder jokingly dubbed the strategy "Dogma '99" — in reference to "Dogma '95," a dictum set forth by a group of Danish directors that precludes the use of movie lighting, makeup, opticals, sound effects and stages, while insisting on handheld camerawork and practical locations. (Complete information on the Danes' "Vow of Chastity" can be found at www.dogme95.dk/dogme/index.htm.) The first films to receive the official Dogma '95 "seal of approval" include Thomas Vinterberg's black comedy *The Celebration*, and Lars von Trier's upcoming effort *The Idiots*. The latter conceived the notion of Dogma '95 after making the acclaimed neorealist drama *Breaking the Waves,* photographed by Robby Müller, BVK, NSC (see "Production Slate" *AC* Dec. '96).

In line with their Dogma-inspired approach, Seder and Fisher shot *Beat Cops* entirely on the streets of New York City, without any concern for diverting pedestrians or traffic. Although an experienced cinematographer was on hand, the production purposefully had no lighting gear — save for a sparingly used bounce card.

The duo drafted Boston-based cameraman T.W. Li (*The Darien Gap*) to film *Beat Cops* over six short days in the fall. Notes Fisher, "T.W. normally shoots 16mm and 35mm independent features, so he has the film aesthetic, which he was willing to interpret for video. Plus, he understands story and knows video."

Director of photography Li found it refreshing to work without "all of the artifice and elaborate lighting," or the delays that an abundance of equipment can cause. "We were ready to go each day within 10 minutes of our call time," he says. "Having worked primarily in film, I have certain feelings about this approach, but people have to realize that these films are going to be made — whether they're shot in 16mm, digital video or another format. Detractors say 'You can't have a movie that looks like this,' but *The Celebration* has proven that the approach can work. We now know that making films with a lot of trucks, trailers and fancy lighting is not the only valid approach."

Seder expounds, "Shooting on HD video also allowed us to work in the high-ratio style we needed to play out the scenes and let them evolve organically. Some of the scenes in *Beat Cops* originally ran for eight or nine minutes. That let our talented cast get to where they wanted to go, and it was also part of our idea about putting a bit of the production back into the actors' hands." Seder also believes that the comparatively brief running time dictated by film magazines might inhibit an actor's free-flowing tendencies, and needlessly complicate production.

Seder and Fisher are anything but detractors of film, however. Their plans for completing *Beat Cops* includes transferring the edited video to 35mm film and then translating that film back to video to create the final master at Sony's High-Definition Center in Los Angeles (at a cost of about $600 per minute).

Asked to outline the rationale behind this process, Seder explains, "We're going for a third look, something that is between film and film-look video. We're after more of a filmic type of image, but we want it to be softer and richer than the various film-look video processes. I'm hoping that the mixture of video and film will create an emotional state that will help me tell the story."

The video frame rate of 30 fps will be maintained in the transfer to film. The duo are hoping that this standard will help eliminate the tape-to-film strobing effect, but they are unsure about where the final result will land on the film-video continuum. (At press time, a trailer for the *Beat Cops* pilot was being prepared for transfer to 35mm film, for exhibition at this year's Aspen Comedy Festival.) "We want that video feel — which now has so many strong associations to reality programming — but we also don't want it to be too harsh," Fisher affirms. "We're not trying to fool anyone into thinking it's film, nor trick anyone into thinking *Beat Cops* is reality, either." ■

Books in Review

by George Turner

Balboa Films

by Jean-Jacques Jura and Rodney Norman Bardin II
McFarland, 302 pps., library binding, $65
ISBN 0-7864-0496-5

Studio histories always make for a fascinating read — especially if they contain an element of mystery, as does the brief and baffling story of the Balboa Amusement Producing Company. Established in Long Beach, California, in 1913, Balboa was America's largest independent studio, and for years remained the only West Coast-based film company that was not merely an outpost to an out-of-state outfit. Herbert M. Horkheimer originally bought the studio from the Edison Company, and, aided by his brother Elwood, quickly updated it into a highly efficient organization. At its peak, the studio consisted of eight downtown acres encompassing 20 buildings, plus an 11-acre outdoor lot located in nearby Signal Hill. With 250 full-time employees, Balboa ranked as the city's largest employer; during productions, the company often doubled its work force. As for the studio facilities, its one glass stage rated as the world's largest, while the film lab had the largest capacity of any west of Chicago.

Under the Horkheimers' supervision, Balboa churned out an enormous number of features, short subjects and serials, releasing them through Fox, Pathé, Paramount, Mutual, General Film, and others. A significant number of the legendary Pathé serials, including several starring Ruth Roland, were actually Balboa productions. The studio's creative talent included William Desmond Taylor, Henry King, Thomas Ince, Lew Cody, Frank Mayo, Fatty Arbuckle, Baby Marie Osborne, Jackie Saunders, Anita King, Texas Guinan, and many more.

The studio's principal cinematographers, ASC fellows William J. Beckway and Joseph Brotherton, were credited with inventing several new techniques for producing in-camera visual effects, and for their use of unusual color-tinting and toning methods. ASC members H. Lyman Broening and Victor Milner, along with George Rizard and George Peters, were some of the other cameramen who at various times helped to make "The Picture Beautiful" (as Balboa's advertising claimed).

Tragically, very few Balboa films now exist. In 1918, the company failed for an ironic reason: in spite of World War I and the great influenza epidemic, the firm produced too many movies for distributors to handle, and many completed productions remained on the shelf as costly liabilities! The studio itself continued to be used by various companies for several years, until its demolition in 1925.

The authors — a college teacher and a talk-show host, both from Long Beach — tell the Balboa tale with enthusiasm. Though their prose sometimes reads a bit like a Chamber of Commerce pamphlet, it fills in as fully as possible a significant gap in cinema history.

Superman on Television

by Michael Bifulco
Bifulco, 222 pps., paper, $24.95
ISBN 0-9619596-3-0

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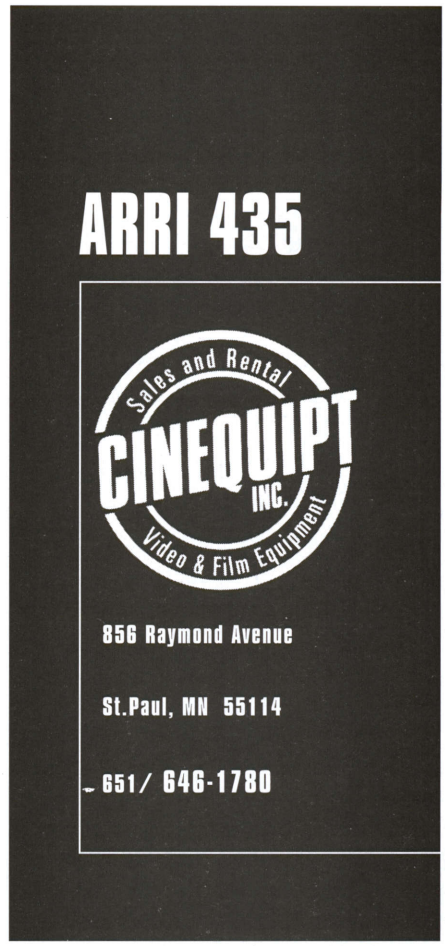

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and infiltrate every entertainment medium. Following in the comic book's wake were spin-off magazines; hardback novels; Paramount cartoons; two 15-chapter Columbia serials; a network radio series; several different TV cartoon series; four big-budget features starring Christopher Reeve; the romantic-comedy TV series *Lois and Clark;* and a new animated show titled *The Batman-Superman Hour.* Copies of the original comic book sell at auctions for stratospheric prices, and the end is nowhere in sight.

For alumni of television's so-called "Golden Age," the definitive "Last Son of Krypton" was embodied by George Reeves, who starred in the two-week 1951 quickie theatrical feature *Superman and the Mole Men.* Its success led into a TV show that eventually encompassed 104 half-hour episodes. What followed were five theatrical features produced for 20th Century Fox, each assembled from three separate TV episodes. Series photography was executed by ASC fellows William Whitley, Clark Ramsey, Harold Stine, Joe Biroc and Harold Wellman. Half of the episodes were filmed in color, but broadcast in black-and-white during the show's original run.

In this photo-filled book, Bifulco has gathered all of the episodes chronologically, provided casts and crew credits, and written excellent synopses for all, including the theatrical features. Other informative writing offers production details and biographical sketches. For lovers of early TV shows, this revised and expanded version of the title's original 1988 edition is essential.

So Far, So Funny:
My Life in Show Business
by Hal Kanter
McFarland, 320 pps.,
library binding, $35
ISBN 0-7864-0483-3

Many a showbiz memoir has promised a laugh on every page, and, more often than not, failed to deliver the goods. Hal Kanter's autobiography makes no promises, but prompts several good chuckles on almost every page, as well as some authentic, out-loud laughs. The material sometimes takes the reader into grim territory — deaths, illnesses, and World War II — but the writing is sufficiently adroit to sidestep the "but seriously, ladies and gentlemen" curse.

Kanter is well-known to many cinematographers, not only for his work as a top-notch comedy writer, producer and director, but for his perennial turns as emcee of the annual ASC Gala, held at the Bel Air Country Club in years past. (The comedian was a personal favorite of the event's organizer, Stanley Cortez, ASC.) Kanter's first Hollywood writing job was a $10-per-week gig as a ghost writer for cartoonist Ving Fuller. After varied hirings and firings and an overdose of anonymity, he became increasingly well-established as a radio gag writer. From radio, he emigrated to movies and then television. In relating his media adventures, Kanter offers anecdotes about Bing Crosby, Danny Kaye, Bob Hope, George Gobel, Don Ameche, Lucille Ball, Don Knotts, Judy Garland, Charles Laughton and a host of others.

Written as expertly as one of his standout scripts, Kanter's recollections provide plenty of good reading. ■

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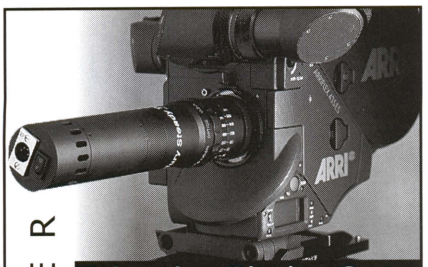

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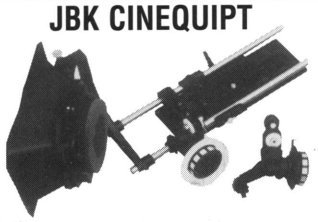

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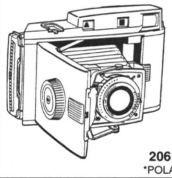

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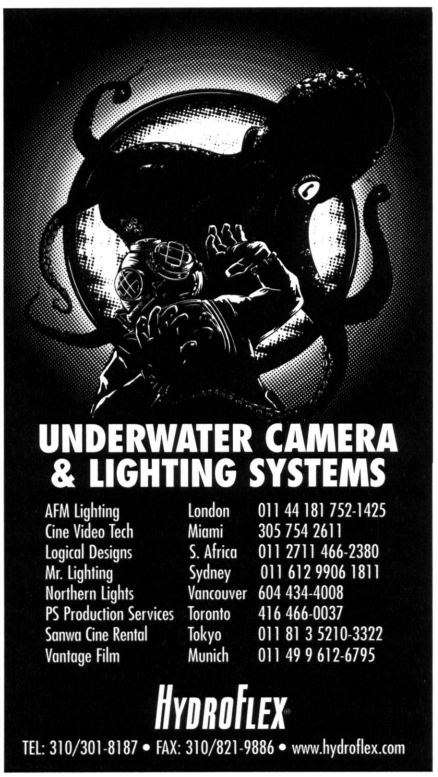

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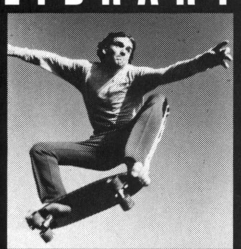

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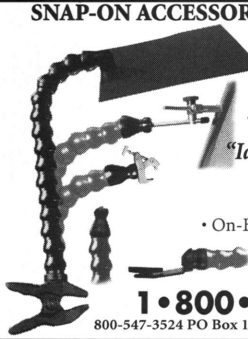

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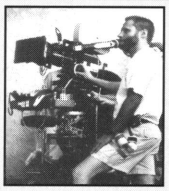

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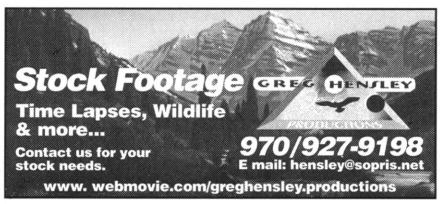

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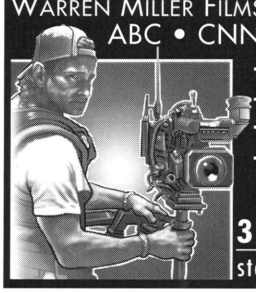

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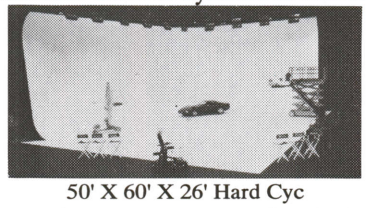
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From the Clubhouse

New ASC Active Members

The ASC recently inducted two more talented active members.

New Jersey native **Ellen Kuras** began her cinematographic career in 1987 with Ellen Bruno's internationally acclaimed documentary *Samsara,* which earned the director of photography Eastman Kodak's Best Documentary Cinematography Focus Award in 1990. A fixture on the independent film scene, Kuras is a two-time recipient of the Sundance Film Festival's Best Cinematography Award (in 1992 for Tom Kalin's black-and-white *Swoon*, and in 1995 for Rebecca Miller's *Angela*). Kuras's other credits include her Emmy-nominated work in the documentary *Century of Women*, the Isaac Mizrahi documentary *Unzipped*, Mary Harron's *I Shot Andy Warhol* (see Sundance Festival coverage in *AC* April '96), Nancy Savoca's HBO special *If These Walls Could Talk, Part 1*, and numerous commercials, music videos and short films. Kuras has also collaborated with director Spike Lee on the historical documentary *Four Little Girls* (*AC* Jan. '98), for which she received a 1998 Best Cinematography Emmy nomination, and on Lee's upcoming feature *Summer of Sam*. The cinematographer's other credits include *Niggericians* (a segment of HBO's *Subway Stories*), Scott Silver's update of *The Mod Squad,* and *The Scalper*, directed by Richard Wenks.

A native of Sydney, Australia, **Steve Mason** began repairing movie cameras for APA Leisure Time International at the age of 18. He later assisted for Donald McAlpine, ASC, ACS on *The Adventures of Baza McKenzie*. At age 20, he photographed his first feature, a surfer-road movie entitled *Highway One*. Mason then continued to assist and operate for other cinematographers (including a gig for John Seale, ASC, ACS on *Gorillas in the Mist*), and did second-unit work for Dean Semler, ASC, ACS on *Mad Max: Beyond Thunderdome*. Mason also shot a number of documentaries (including *Tale of Ruby Rose, Luigi's Ladies* and *Waiting*), before earning international acclaim on Baz Luhrmann's dance-filled comedy *Strictly Ballroom*. He then spent time in America while shooting his first Hollywood feature, the comedy *To Wong Foo, Thanks for Everything, Julie Newmar*. He has continued to work on numerous commercials and such features as *That Old Feeling, Buddy,* and *BASEketball*.

Incoming ASC Associates

In addition to the aforementioned active members, the ASC recently welcomed three new associate members.

Emory M. Cohen is the president/chief operating officer of the Los Angeles-based Laser Pacific Media Corporation. Cohen's own career began in 1963 at Glen Glenn Sound, where he became vice president of operations some 11 years later. While in this position, Cohen developed the Postproduction Audio Processing (PAP) system, which applied videotape technology to film sound, and became a forerunner to today's sound processing systems. This invention earned him an Academy Scientific and Technical Award in 1978. Cohen moved on to become president of Compact Video Services, where he oversaw construction of the firm's Image Transform Film Laboratory. He later assumed the presidency of Pacific Video, Inc. (which merged with Spectra Image, Inc. in 1990), and has since served as its president and chief operating officer. In 1989, he received an Emmy for his development of an electronic laboratory at Laser Pacific. He currently serves on the Film Laboratory Subcommittee of the AMPAS Engineering Awards Committee.

In his youth, **Karl Kresser**, a native of Dornbirn, Austria, worked as an assistant to several photographers before finding employment at PhotoWinnsauer, his homeland's largest commercial studio. In 1983, he joined Otto Nemenz in Los Angeles. After working his way through all of the company's technical departments, he became a rental manager in 1988. He is now the marketing manager for all of Otto Nemenz's international business, sales and rentals. In addition to negotiating deals with local studios, he works in tandem with cinematographers to introduce and develop new equipment. For the past four years, he has served on the AMPAS Technical Subcommittee to evaluate equipment for the Technical Achievement Awards, and 1999 marks his second year as a member of the Technical Awards Committee at the CINEC show in Munich, Germany. Kresser is an founding partner of the Cine Gear Expo, a member of SMPTE, and an associate member of the Society of Operating Cameramen.

Technical advisor **Curtis Jones** is a 20-year veteran of Eastman Kodak. A native of Connecticut, he graduated from Howard University's Film and Television School in 1975. He later moved to the New York/ New Jersey area to work in marketing for a wide variety of film industry customers. Jones later worked in Kodak's Atlanta and Washington, D.C. branches, and spent two years as director of marketing in New York City. In 1994, he ventured to Hollywood, where he now works closely with directors of photography, using his years of expertise and knowledge to aid them in the evaluation of film stocks. Jones is also a member and affiliate of numerous professional organizations, including the SMPTE, the Council of Non-Theatrical Events, the International Television Video Association, the Independent Feature Project, the Washington Film and Video Council, the Society of Operating Cameramen, and Women in Film. ■

WRAP SHOT

The *El Cid* camera crew, under the supervision of cinematographer Robert Krasker, BSC, frames an epic scene.

During the 1950s and '60s, the television and motion picture industries waged a furious war over the all-mighty audience share. To compete with the lure of the small screen, Hollywood studios brought out some big, impressive guns. Colossal productions came into vogue, with such films as *Ben-Hur* (1959), *Spartacus* (1960) and *Lawrence of Arabia* (1962) taking advantage of a variety of new widescreen/large-format technologies — MGM's Camera 65, Super Technirama 70, and Super Panavision 70, respectively — to convince moviegoers that bigger was indeed better.

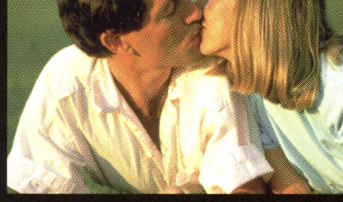
Here's an epic production still from *El Cid* (1961), one of the most enjoyable of these lavish spectaculars (see full coverage in *AC* Jan. 1962). Directed by Anthony Mann, and starring Charlton Heston as the legendary 11th-century leader who ousted the Moors from Spain, the $7 million production was beautifully photographed in Super Technirama 70 by Australian-born cameraman Robert Krasker, BSC.

Technicolor's Technirama cameras were heavily modified versions of their old three-strip color units. With their 8-perf horizontal film movements, 1.496" x 0.99" apertures, and 2,000' magazines, the cameras utilized 35mm stock in a manner almost identical to the Technicolor/Paramount VistaVision process. In fact, some VistaVision units were also converted for Technirama use.

Despite these similarities, however, the two formats were quite different. VistaVision offered impressively high-resolution images, but its 1.96:1 aspect ratio was hardly "wide" — and only possible when footage was properly screened with a VistaVision projector. (Extraction 35mm prints were generally released in 1.66, 1.75 or 1.85:1.) However, with the additional use of a taking lens with 1.5:1 compression to squeeze more information onto the negative, Technirama could be transformed into either very high-quality CinemaScope/Panavision-compatible 2:1-compressed 35mm anamorphic reduction prints (by taking advantage of an extra 1.33 squeeze in the optical step), or a 2.2:1 aspect ratio (when unsqueezed and printed directly to 70mm, a.k.a. "Super Technirama 70").

The Technirama camera seen here is a retrofitted Technicolor three-strip unit featuring a vertical coaxial magazine. The cast and crew is on location at the authentic 11th-century site of Peñiscola, an ancient walled city on the Spanish Mediterranean coast. Aiding Krasker on the show was Manual Berenguer, ASC, who headed up the second unit.

— David E. Williams



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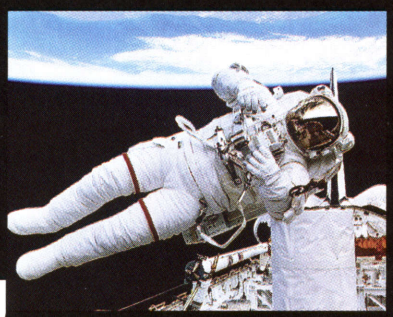

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